

\$4.25 Canada

THE NEWEST, MOST INDEPTH MAGAZINE FOR TANDY'S COLOR COMPUTER 2 & 3

*Second
Anniversary
Issue*



◀◀◀ GIMMESOFT ▶▶▶



A new generation of Color Computer products

V-Term Terminal

- Vax, Unix, Mainframe, and BBS systems
- Vt-100, Vt-52, Vidtex, and Ascii emulations
- Works with EMACS and VI full screen editors
- Full 28x80 screen, 128 ASCII characters
- High-Res graphics, Monochrome support
- Serial port to 2400, RS-232 to 19,200 baud
- DCModem Pak and Disto controller support
- XModem, XModem-CRC, YModem, & ASCII
- File transfers direct to disk or memory
- 15 entry autodial, 10 programmable macros
- 35/40/80 Tracks, Hyper I/O & RGBDOS
- Disk (128k or 512k CoCo 3 only) \$39.95



Telepak II

A Truly Compatible RS-232 Interfacel
Telepak II answers the demand for an RS-232 interface. It comes with a 3 foot DB25 cable, gold edge contacts and is built with low power drain (5v) components. Works on all CoCo 1,2, or 3. MPI or Y-Cable required on disk systems. Telepak & Manual \$49.95

Y-Cables

Gold contact Y-Cables \$27.95

V-TERM + Telepak ..\$79

Turbo 512k Ram

- Fully assembled and tested board
- Premium 120ns 256x1 memory chips
- Easy to follow instructions
- Fast and easy installation
- Complete with 512k software
- RamDisk, RamTest, & Print Spooler



512k board w/software ... \$108.95

0k board w/software ... \$34.95

512k + Studio Works \$155

Studio Works

A digital audio sampler second to none! Full point & click. Includes reverse, delete, copy, volume control, play block, sequencer, envelope shape, key play, play thru, looping & file compression. Samples 17k/sec. Works with Maxsound cable!

W/O cable - \$38.95 W/cable - \$53.95

- Warrior King \$29.95*
- Kung-Fu Dude \$24.95
- In Quest of the Starlord \$34.95*
- Hint sheet for Starlord \$3.95
- Pyramix \$19.95*
- Hall of the King 1 2 or 3 \$29.95
- Dragon Blade \$19.95
- White Fire of Eternity . \$19.95
- Paladin's Legacy \$24.95

* CoCo 3 only

Games

KYUM-GAI
-To be
Ninja

Kyum-Gai: to be Ninja

As the Ninja Gai-Dan, you must find and destroy evil forces, use a multitude of martial arts moves to defeat your enemies, obtain treasures & weapons, and evade obstacles! Kyum-Gai: to be Ninja uses the most detailed 320x200, 16 color graphics, the highest quality digital sound effects and spectacular animation!

CoCo 3, disk, & joystick .. \$29.95

Multi-Label III Version 2.00

This latest version of Multi-Label III now prints labels one, two or three across! Comes configured for most Tandy and Epson printers .. \$16.95
Upgrades to Version 2.00 .. \$6.95

Fkeys III (CoCo 1,2, 3) \$19.95

Easy to use, DOS mods, 20 function keys

Sixdrive (CoCo 1,2, 3) \$16.95

Use up to 3 d/s drives as 0,1 2,3 4,5.

LOCKING
PLATES

MPI-CoCo Locking Plates

This money saving device is now available for the CoCo 2 and 3! It is important when ordering to specify CoCo 2 or 3 and MPI 26-3024 or 26-3124. Only \$7.95

Suprfile III (CoCo 3 only) \$29.95

Easy to use, multi-purpose database.

BidWriter (pc/xt/at only) \$49.95

Create & print professional proposals.

Toll Free

1-800-441-GIME

Order Line

Free 2ND AIR from Midwest to California

Orders: 9am to 9pm Eastern time

On-line orders: Delphi's CoCo Sig

Inquiries & technical assistance: 7pm to 9pm:

GIMMESOFT

P.O. Box 421

Perry Hall, MD 21128

301-256-7558

Add \$3.00 for shipping and handling

Add \$3.00 for COD (USA only)

MD residents add 5% sales tax

VISA/MC/Check/Money Order/COD

CoCo Clipboard Magazine

Vol. 3 Issue 1 Sept./Oct. 1989

ISSN 0899-6415

Editor and Publisher
Theodore W. Paul, Jr.

Associate Editor
Darlene M. Paul

Contributing Writers: Rush T. Caley, Jim DeStefano, Kraig Brockschmidt, Mike Dooley KE4PC, Bob van der Poel, Bill Brady, Randy Krippner, Paul Bornemann, Shelby LaMont

Printed by: Falconer Printing & Roach Photography

CoCo Clipboard Magazine™ is published bi-monthly (6 times a year) by:

CoCo Clipboard Magazine
3742 U.S. 20, Box 3
Fredonia, N.Y. 14063
(716) 679-0126

ENTIRE CONTENTS COPYRIGHTED

NO PORTION OF THIS MAGAZINE OR CLIPDISK MAY BE REPRODUCED, BY ANY MEANS INCLUDING BBS SYSTEMS EXCEPT BY EXPRESS WRITTEN PERMISSION OF THE PUBLISHER.

Tandy, Extended Color Basic, Color Basic and Program Pak are registered trademarks of Tandy Corp. CompuServe is the registered trademark of CompuServe, Inc.

All programs, information and articles are distributed on an "as is" basis without any warranty of any kind whatsoever.

CoCo Clipboard, The Clipboard, Clipboard BBS Systems, "Clipper Koala," ClipDisk and Clipboard Convo are trademarks of CoCo Clipboard Magazine.

Subscriptions to CoCo Clipboard Magazine are:
\$15.00 U.S. Funds per year for 6 issues.
\$28.00 U.S. Funds for 12 issues. We accept checks or money orders only. Canadian subscriptions are \$18.00 in U.S. Funds. All overseas subscriptions are \$27.00 U.S. Funds surface mail.

Orders may be sent to:
CoCo Clipboard Magazine
3742 U.S. 20, Box 3
Fredonia, N.Y. 14063

Full refund after one issue. No refunds after two issues.

Your comments and suggestions are welcome. We reserve the right to edit and publish all letters received unless requested not to by the writer.

PLEASE NOTE: Subscription orders received **AFTER** the first week of a publication month will begin with the **NEXT ISSUE**. We cannot start subscriptions with back issues.

We Now Accept



For Your Subscription
and ClipDisk Orders

(716) 679-0126 9 am to 9 pm Eastern
Monday thru Saturday

CoCo Clipboard Magazine

Vol. 3 Issue 1 Sept./Oct. 1989

TABLE OF CONTENTS

From the Desk of by Ted and Darlene Paul	page 5
Reader Mail	page 6
Product Reviews:	
Extended ADOS3+	page 9
Puppo's IBM Keyboard Adapter	page 13
Burke & Burkes OS File Repack System	page 15
CRC Floppy Drive Controller	page 18
Ultra-Cat	page 21
Random Numbers by Bob van der Poel	page 24
Baseball Card Database by Haverstock & Wills	page 29
C.C.B.M.S. V by Jim DeStefano	page 35
"Glad You Asked" - RGB Monitor Fix by Bob Gault..	page 42
"Downtime" by Rush Caley	page 45
* * * * *	
ClipDisk Ordering	page 11
Clipboard Coupons	page 12
Clipboard Subscriptions	page 16
Advertiser Index	page 46

As we go to press . . .

Because of the length of many of our reviews in this issue and the very long program listings, *Painless OS9*, *The Assembly Line* and *CoCo 'N Amateur Radio* columns will not appear in this issue. They will return next issue.

We also are announcing an immediate price increase for subscriptions and back issues. Continuing price increases for everything from postage and printing to envelopes and labels have forced us to raise these prices. *ClipDisk* however will not rise in price. Please see the subscription page for complete details. We regret this increase and we appreciate your support.

Color Computer Software from Cer-Comp Ltd.

Window Master V2.2

The hottest new program available for the Color Computer III! Now you can have Windows, Icons, Buttons, Pull-Down Menus, Edit Fields and Mouse Functions built into your Basic or Machine Language Programs easily and quickly, without the need for OS9.

It supports up to 31 Windows on the display, multiple fonts in 54 possible sizes and styles, Enhanced Basic Editing and much more. It adds over 50 Commands and Functions to Basic to fully support the Point & Click Window System. In fact it has so many features it would take several pages to describe them all.

It is completely compatible with existing Basic programs and takes absolutely no memory away from Basic. It contains a built in Ram Disk which is completely transparent to Basic (512k version) for enhanced operation.

It requires 1 Disk Drive, R.S. Hi-Res Interface & Joystick or Mouse. Includes both the 128k & 512k versions for only \$69.95

Window-Ware

Window Writer - A Point & Click Word Processor, features both Mouse & Keyboard type editing, proportional printer support, powerful formatting capability, works with any printer. Requires Window Master & 512k- \$59.95

Window Basic Compiler - A Basic Compiler similar to CBASIC only it compiles all the Window Basic statements to create super fast M.L. programs & Desk Accessory programs for Window Master \$99.00

Window EDT/ASM - A full featured Editor/Assembler and Debugger for the Window Master System \$49.95

Font/Icon Editors - A utility disk with the Font & Icon Editors so you can edit or create your own, includes Basic & M.L. versions \$19.95

Advanced Programmers Guide - A manual for the Advanced Basic & M.L. Programmer with information on interfacing to Window Masters complete system including System Calls, Memory Map, Interrupt handling & Extended Memory access. \$24.95

512K RAM UPGRADE

Give your COCO 3 all the power it deserves with this easy to install (no soldering/plug in) 100% Tandy compatible 512K memory upgrade. Completely assembled and tested. Includes Ramdisk & Memory Test software described below. \$159.95, Upgrade + Window Master \$199

512K RAMDISK & TESTER

RAMDISK is an ALL Machine Language program that will give you 2 ULTRA High Speed Ram Disks in your CoCo-3. It does not need or require the OS-9 operating system. It works with R.S. DOS V1.0 or V1.1 and it is completely compatible with Enhanced Color Disk Basic! Plus it allows your CoCo-3 to run at double speed all the time even for floppy disk access!!! It will not disappear when you press reset like some other ramdisk programs. The MEMORY tester is a fast ML program to test the 512K ram. It performs several bit tests as well as an address test so you know that your 512K of memory is working perfectly.

Requires 512K & Disk \$19.95

CBASIC Editor/Compiler

The ULTIMATE Color Computer BASIC COMPILER!!!

If you want to write fast efficient machine language programs and you don't want to spend the next few years trying to learn how to write them in Assembly language or with a cheap compiler, then CBASIC is the answer!!!

CBASIC is the only fully integrated Basic Compiler and Program Editing System available for the Color Computer. It will allow you to take full advantage of all the capabilities available in your CoCo without having to spend years trying to learn assembly language programming. CBASIC allows you to create, edit and convert programs from a language you are already familiar with Enhanced Disk Color Basic, into fast efficient machine language programs easily and quickly.

CBASIC supports all the enhanced hardware available in the CoCo 2 & 3, including Hi-Res Graphics, & Screen displays, Extended Memory and Interrupts. We even added advanced commands not available in Basic to give you a level of control only available to very advanced Machine Language Programmers. Plus we made it exceptionally easy to use, not like some other compilers. CBASIC is the friendliest and easiest compiler available for the Color Computer.

CBASIC is a powerful tool for the Beginner as well as the Advanced Basic or Machine Language programmer. CBASIC features well over 150 Compiled Basic Commands and Functions that fully support Disk Sequential and Direct access files, Tape, Printer and Screen I/O. It supports ALL the High and Low Resolution Graphics, Sound, Play and String Operations available in Enhanced Color Basic, including Graphics H/GET, H/PUT, H/PLAY and H/DRAW, all with 99.9% syntax compatibility.

CBASIC makes full use of the powerful and flexible GIMI chip in the Color Computer 3. It will fully utilize the 128K of RAM available and install 2 Ultra Fast Ramdisks if 512K is available, for program Creation, Editing and Compilation. You can easily access all 512K of memory in a Compiled program thru several extended memory commands that can access it in 32K or 8K blocks and single or double bytes.

CBASIC has its own completely integrated Basic Program Editor which allows you to load, edit or create programs for the compiler. It is a full featured editor designed specifically for writing Basic programs. It has block move and copy, program renumbering, automatic line number generation, screen editing, printer control and much more.

Coco 1,2 or 3 Disk \$149.00

To order products by mail, send check or money order for the amount of purchase, plus \$3.00 for shipping & handling to the address below.

To order by VISA, MASTERCARD or COD call us at (702) 452-0632

(Monday thru Saturday, 8am to 5pm PST).

CER-COMP Ltd.
5566 Ricochet Avenue
Las Vegas, Nevada 89110
702-452-0632

DataPack III Plus V1.1

SUPER SMART TERMINAL PROGRAM
AUTOPILOT and AUTO-LOG Command Processors
X-MODEM DIRECT DISK FILE TRANSFER
VT-100 & VT-52 TERMINAL EMULATION

- No lost data even at 2400 Baud on the Serial port.
- 8 Selectable Display Formats, 32/40/64/80 columns
- ASCII & BINARY disk file transfer via XMODEM.
- Directly record receive data (Data Logging).
- VT-100 emulation for VAX, UNIX and other systems.
- VT-100/52 cursor keys, position, PF & Alt. Kbd. keys.
- Programmable Word Length, Parity, Stop Bits.
- Complete Full and Half Duplex operation,
- Send full 128 character set from Keyboard
- Complete Editor, Insert, Delete, Change or Add.
- 9 Variable length, Programmable Macro Key buffers.
- Programmable Printer rates from 110 to 9600 Baud.
- Send Files from the Buffer, Macro Keys or Disk.
- Display or Print the contents of the 50k Buffer.
- Freeze Display & Review information On line.
- Built in Command Menu (Help) Display.
- Built in 2 Drive RAMDISK for 512K RAM.

Supports: R. S. Modem-Pak & Deluxe RS-232 Pak.

Coco 1, 2 or 3 Disk - \$59.95

"The SOURCE"

DISASSEMBLER & SOURCE CODE GENERATOR

The SOURCE will allow you to easily & quickly Disassemble Color Computer machine language programs Directly from Disk and generate beautiful, Assembler Source code.

- Automatic label generation.
- Allows specifying FCB, FDB and FCC areas.
- Disassemble programs Directly from disk.
- Automatically locates address.
- Output listings to the Printer, Screen or both.
- Generates Assembler source directly to disk.
- Built in Hex/Ascii dump/display.
- 8 Selectable Display formats 32/40/64/80.
- Selectable Foreground & Background colors.
- Built in Disk Directory and Kill file commands.
- Menu display with single key commands.
- Written in Ultra Fast Machine Language.

Coco 1, 2 or 3 Disk \$49.95

EDT/ASM III

DISK EDITOR ASSEMBLER

EDT/ASM III is a Disk based co-resident Text Editor & Assembler. It is designed to take advantage of the new features available in the CoCo-3 with either 128K or 512K of memory. It has 8 display formats from 32/40/64/80 columns. There is also a free standing ML Debug Monitor.

EDT/ASM III has the most powerful, easy to use Text Editor available in any Editor/Assembler package for the Color Computer.

- Local and Global string search and/or replace.
 - Full Screen line editing.
 - Easy to use Single key editing commands.
 - Load & Save standard ASCII formatted files.
 - Block Move & Copy, Insert, Delete, Overtyping.
 - Create and Edit files larger than memory.
- The Assembler features include:
- Supports Conditional IF/THEN/ELSE assembly.
 - Supports Disk Library file up to 9 levels deep.
 - Supports standard Motorola directives.
 - Allows multiple values in FCB & FDB directives
 - Allows assembly from the Buffer, Disk or both.

Coco 1, 2 or 3 Disk \$59.95

From The Desk Of . . .

Ted and Darlene Paul

Can you believe it!!! We have completed two full years of publication and are ready to charge right into year three! Oh, I know we've been a little late now and then but we got them all written, pasted up and in the mail. This issue is our second anniversary edition and marks the start of our third year.

Over the last several issues I have mentioned some announcements that I had planned on making for this edition. As "fate" would have it none of the projects have finalized and therefore I can't say anything with a 100% guarantee they will all happen. We are looking at the following:

1. A special section on OS-9 in French for our subscribers in French speaking Canada.

2. Typesetting for most of the magazine. No, we have not recently acquired a network of Tandy MS-DOS machines which interface with our in house typesetter. One reason is cost. Those machines and the software needed to run them costs a LOT of money. You either absorb the cost or you raise your ad rates, subscription rates or both. Or you could cut your production costs by cutting pages. Our plan, if all falls into place will let us prepare our ASCII files, convert them to an MS-DOS format and send them to our printer. They will then process them through their typesetter returning the finished "galley strips" to us for final paste up. When it happens you'll know!

3. We will begin exporting CoCo Clipboard to Blaxland Computer Ltd. in Australia. According to their information, Australia has NO magazine for the CoCo produced in that country. We currently have subscribers "down under" as other magazines do. However no magazine is publishing an "Aussie" edition. Proposals, and counter proposals are involved and we hope to have bulk magazines to Blaxland by the end of October.

4. We are also starting to work on a more uniform format for page layout for the magazine. Without going into complex detail, we think we have hit on a clean, yet attractive system. Hopefully you won't notice it, but just as hopefully the magazine will become easier to read.

This edition features several interesting programs and articles. Rush Caley is finally back with his always wry humor and insight. Randy starts to wrap up the Start OS-9 column and we will be moving to a new column on Pascal very soon. T.C.E. is still providing the DEFT Pascal series and we will be using this software as our base. Mike Dooley is back with a hardware project and Bob Gault will get you RGB Monitor tuned up. We've got some very good in depth reviews as well and more product continues to arrive each day.

Speaking of new developments in and around the CoCo world you'll be surprised to hear that....

There is now a version of OS9 for the MAC...

Microware has announced OS9 for IBM style PC's

Kevin Darling and Tony DeStefeno have prototyped a CoCo 3 with a full meg of RAM. By the time you read this Tony should be showing off the unit somewhere in New Jersey - possibly taking orders.

What does all this mean? Well, we've got people looking into the various new versions of OS9 to see what if any implications there may be for CoCo users. If, and it's that usual BIG if, IBM PC type computers start using OS9 as an operating system we might see versions of various high end programs available for the CoCo. Now don't start asking when they will be available, I didn't say that. What is interesting to note though is that IBM's highly touted OS/2 operating system doesn't seem to be catching on real fast - and neither does Micro-Channel. After being out for well over a year I haven't seen either the OS or the Micro Channel type computers taking the wide personnel computer market by storm.

What I am saying is that perhaps, just maybe somebody has figured out that when you make OS9 or a derivative of it operate your IBM type computer, it then becomes a "real" computer. If that is so, then perhaps we might see LOTUS 1-2-3 or Aldus

From The Desk continued on 39

Reader Mail



Dear Editor:

I just received 3 of the 6 back issues I ordered, as well as subscribing. Being accustomed to "Rainbow", I found your recent articles excellent (like Rainbow also), especially the Hard Drive Software review in the March / April '89. I also want the Sept. / Oct. '87 issue where DeStafeno looked at CoCo hard drives. Also, I'm looking for Rush Caley who wrote the CoCo - M100 data exchange article in the Nov. / Dec. issue.

Thanks,

Dale Hawley,
Seattle, WA.

Dear Dale:

Glad you've been enjoying the articles in Clipboard. Rush Caley returns in this edition of the magazine. Jim DeStafeno has two more hardware reviews in this issue.

Dear Ted:

What can I say? "Thank you" seems far less than adequate to express our gratitude to you for your May 26th. visit to The Penn-Jersey Color Computer Club. However, on behalf of the club membership, thank you.

Your presentation was excellent and very well received. I know that you made many friends among our membership. You represent your fine publication with appropriate enthusiasm. The meeting was one of the highlights of the year.

Cordially, yours,

Peter Unks
Phillipsburg, PA

Dear Peter:

We have been richly blessed during our visits to your area of Eastern Pennsylvania and New Jersey. I guess the only drawback

is that l o n g ride across the PA Pike - it's always raining! This gives me a chance to mention to our other readers that CoCo Clipboard "travels!" We will be happy to visit your local club meeting anywhere within 500 miles of Buffalo, NY. That includes a big area folks and if you're 505 that's ok! Please give us our office a call for complete details and arrangements. And by the way there is never a charge to your club.

Dear Ted & Darlene:

I have been subscribing to your magazine for a couple of months now. I find most of the articles interesting and informative, in particular the articles about OS-9.

I would also like to comment on your apparent policy of putting down the Rainbow Magazine every chance you get. Yes, their magazine does run a lot of articles for beginners, as well as games. However, they are currently serving a much different market than you are. They are much more widely distributed than you are, and have been around a lot longer.

I think it would be a bad idea for your magazine to get involved in a mutual hate war with Rainbow. The CoCo community has for many years been founded on mutual assistance, and one of the biggest plusses that I have found is the wide variety of people and experiences available.

I currently subscribe to both magazines and plan to continue to do so for the foreseeable future. However I would prefer to continue receiving the Rainbow and CoCo Clipboard and not the Rainbow and CoCo Enquirer.

Sincerely,

Colin McKay
Ottawa, Ontario

Dear Colin:

I published your letter because I realize that our readers should have a forum to make their views known. When I wrote my

Reader Mail continued on 7

Reader Mail continued from 6

column mentioning that "other" magazine it was in response to their indirect mention of Clipboard. Unfortunately part of what they said was based in part on some misinformation they received. The details at this point in time don't really matter. I tried to answer their somewhat negative mention of us in a more positive tone - even trying to add a bit of humor. A very few people misinterpreted what I was trying to say.

The publication of the letter in the "Reader Mail" section was one of those decisions that was made because of the reason I published your letter, people need to know they have a forum to speak their mind. Anyway, if anybody is looking for a Hatfield-McCoy shoot out between Rainbow and Clipboard won't find it here. Oh, I'm sure we will take some pokes at each other from time to time but as far as a war - nope.

(The following letter has been edited)

Dear Ted & Darlene:

Thank you for sending the copies of CoCo

Clipboard, Vol. 2 Issue 5 and 6.

Also, congratulations on the birth of your fourth child! Was it a boy or a girl? What is his or her name?

I really got a lot out of your editorial, "Seize the Day - Carpe Diem". I know that you as a magazine, have influenced my life. I like to read, and I especially like to read Color Computer magazines and books.

I thought about everything I do and wondered if it affected any other lives besides my own. I am a volunteer at our local elementary school two days a week. I am also a hemodialysis (artificial kidney) patient. I thought about my relationships with the nurses and other patients at the hospital. I try to make a difference in their lives ... remembering names, being friendly ... my parents and I have become the unofficial Welcome Wagon for new patients at the unit. I also play the piano at church each Sunday. I usually play along with the organist, but sometimes alone (not really alone!) I like to think that my music has an effect on the listeners and possibly a difference in their lives....

Sincerely,

Lee Deuell
Shell Rock, IA

Dear Lee:

Nothing I could possibly say could improve on your letter. You are really making a difference - thanks for taking the time to write!

CoCo
Clipboard
Magazine

"Simply Better" Word Processor

*RUN 2 INTERACTING WORD PROCESSORS SIMULTANEOUSLY *
PERFORM MAIL-MERGES * CREATE INDEXES * CREATE TABLE OF
CONTENTS * PRINT-FILL FORMS * DISPLAYS FONTS IN SELECTED
COLORS * DISPLAYS UNDERLINING * PRINT SPOOLING * AUTO SAVES
FILES * SERIAL/PARALLEL OUTPUT * PRINT/SAVE BLOCKS OF TEXT *
HEARING IMPAIRED MODE * UP TO 480K OF TEXT STORAGE * SORT
SECTIONS OF TEXT * MANY MORE FEATURES *

"... An excellent choice at an
unbelievable price."
— Rainbow Magazine



Special Intro Price... \$29⁹⁵

SEE REVIEW AND ARTICLE IN
APRIL '89 RAINBOW, SEE WHY ...

When It Comes To Word Processing,
we're... "Simply Better"

Call for a Free Brochure
All Orders, Call... 1-800-248-8420



For Color Computer 3 only. Please add \$3 S/H



Simply Better Software

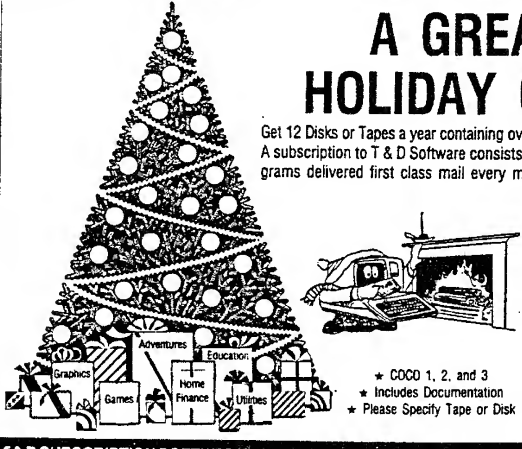
P.O. Box 20726
Portland, OR 97220

TECHNICAL ASSISTANCE

9 AM - 5 PM
(503) 254-7225

A GREAT HOLIDAY GIFT!

Get 12 Disks or Tapes a year containing over 120 quality programs. A subscription to T & D Software consists of 10 ready-to-run programs delivered first class mail every month.



	Tape or Disk	Holiday Savings
2 Years	\$54.00	\$100.00
1 Year	29.95	60.00
6 mo's	14.95	30.00

HOLIDAY BONUS: Subscribe for a year, receive our latest 2 Back Issues FREE! Subscribe for 2 years, receive 4 FREE!

* COCO 1, 2, and 3
* Includes Documentation
* Please Specify Tape or Disk

T & D SUBSCRIPTION SOFTWARE, 2490 MILES STANDISH DR., HOLLAND, MI 49424 (616) 399-9648

RASCA

VIDEO DIGITIZER

The Rascan Video Digitizer is a state-of-the-art image processing system designed to take advantage of your Color Computer 3's graphic capabilities.

The Rascan Video Digitizer connects easily to any color or black & white video camera, video recorder or video disc player and captures images with precision accuracy.

Why settle for a 256 x 256 image area when the Color Computer can display so much more? We asked that question ourselves. Our only answer was to provide an image area of 640 x 200 and 320 x 200! Say good-bye to those useless lo-resolution images created by other digitizers on the market.

Life is not simply black & white, that's why we added living color to our Digitizer. Now, through the use of advanced programming techniques, 512K Color Computer 3 owners can capture images from their video camera and display them in 4096 Super Hi-Resolution graphics!

Capture images effortlessly. Simply select the image capture option and turn your Rascan unit on. Within seconds your image will be captured and displayed on your screen. Images can be fine tuned by use of the contrast and brightness knobs found on the Rascan unit.

Rascan also features a *professional pop-up menu system* which will allow for easy palette manipulation and color painting of captured images.

The Rascan Video Digitizer comes complete with Rascan driver software, an easy to read manual, sample graphic images disk and print driver disk (supporting most printers). Although no further graphic editors are necessary to produce quality images, Rascan images can be easily loaded into ColorMax and CoCo Max graphic editors.

Whether your interests are in desk-top publishing, report generation or simply for fun, the Rascan Video Digitizer will provide you with images of near photographic quality!

FEATURES	RASCAN		DS-69b	
	YES	NO	YES	NO
Support of 640 x 200 16 Level Grey Images	X			X
Support of 640 x 200 4 Level Grey Images	X			X
Support of 320 x 200 16 Color Images	X			X
Support of 4096 Hi-Res Color Graphics in 512K mode	X			X
Support of Multiple Image Buffers in 512K mode	X			X
Control of Contrast & Brightness via Control Knobs found on Digitizer	X			X
Professional, Easy to Use Pop-Up Menu System	X			X
Designed Exclusively to Take Advantage of the power of the Color Computer III	X			X
Built In Histogram Utility to Aid in Image Quality	X			X
Easy to use Paint and Palette editing, no need for additional Graphic editors	X			X
15 Day Full Money Back Guarantee	X			X
Interface through Joystick Ports	X			X
Requires additional cost of Y-Cable or Multi-Pak interface		X	X	

THE
RASCAN
VIDEO
DIGITIZER
\$159⁹⁵

NO RISK GUARANTEE

If you are not completely satisfied with the performance of your Rascan Video Digitizer, you may return it, undamaged within fifteen days for the full refund of the purchase price plus shipping costs.



P.O. Box 6907, Burbank, CA 91510-6907
(818) 566-3571 • BBS: (818) 772-8890
Toll Free: 800 877-2232 ext. 139



Personal checks, money orders, and American C.O.D. orders accepted. Include \$3.00 for S/H. \$2.50 extra for C.O.D. orders. (Cal. res. add 6.5% tax.)
ATTENTION PROGRAMMERS: Game Point Software is looking for talented writers. Top royalties guaranteed.

Product Reviews

Review Crew

***EXTENDED* ADOS-3**

SpectroSystems
11111 N. Kendall Drive, Suite 108 A
Miami FL 33176
(305)274-3899

Pgm. Type: Alternate CoCo DOS (MUST be burned into EPROM)
Requires : 128K CoCo3 + disk
Price : \$39.95 alone, \$64.95 w/ADOS-3 + \$2 shipping
Add: \$10 for 28-pin adapter, for 24-pin disk controllers.
\$5 for SmartWatch/Disto real-time clock driver. \$35 for SmartWatch clock (includes above driver free)

Reviewed by Don Ricketts

This will be a somewhat difficult review for me to write. And it's not because the product does not live up to its expectations, but rather because it's so exciting. I'd rather be playing with it than writing about it! I reviewed ADOS-3 in this magazine a few months ago, and was very impressed with it. Little did I know how much more amazed I could be by its new embellishment, ***EXTENDED* ADOS-3**.

Unlike regular ADOS3, ***EXTENDED* ADOS-3** MUST be burned into an EPROM to realize its benefits. Also, ***EXTENDED* ADOS-3** is not a stand alone DOS -- you must already have ADOS3. The disk you receive has everything necessary to add the extended functions to your ADOS3, for burning into an EPROM. There are a number of utilities on the disk that mimic many of the commands, but when using them as a disk utility, you can only use one at a time. These utilities are provided as a sort of get a feel for it sampler to discover some of the extended functions. SpectroSystems provides all the information necessary to get an EPROM burned with your configured setup.

The customizing of ***EXTENDED* ADOS-3** is done just like it was for ADOS3 -- editing a BASIC program with your particular wants and needs. Actually, there are two programs that need to be edited. Again, the programs are so well commented that it could probably be done without documentation. After you have customized the programs, you then

run the main one, ECUST.BAS, making sure you have a disk copy of your ADOS3 on the new disk. What's that - you can't find your disk version? No problem. There is a program on the disk that will "read" your ADOS3 EPROM and create a disk version of it. Running ECUST creates a file which is then burned into an EPROM. Now for some of the new goodies.

First of all, you can configure in 109 more characters worth of control keys, or macros. ADOS3 was limited to all drives having the same number of tracks. Not so with ***EXTENDED* ADOS-3**. You can mix n' match just about anything you have, all the way up to three 80-track double-sided drives. And for the 512K owners out there, you get an additional two Ram disks! Only four drives can be used at any one time, but there is a CONFIG command that can be used directly, or within a BASIC program, to switch the logical drives around wherever you want them. It is kind of complicated to get into here though.

Concerning the Ram disks, remember that they are up in the 512K area, so 512K programs will no doubt crash them, so get any important files off beforehand. For the record, a DSKINI of a Ram disk takes less than a second, and a BACKUP of one full Ram disk to another is done in less than 3 seconds.

I have a 512K CoCo3 and find that I am using the Ram disks more and more every day. I do a lot of digitizing, then converting the picture files to what most users can view. There is a lot of disk swapping, which can be very tedious, but with these incredibly fast Ram disks, I hardly have to do any disk removal/insertion at all. I start my session by backing up my picture digitizing and conversion utility disk to one of the Ram disks, which takes half the time of a regular BACKUP (15-20 seconds). Then I load the various utilities from the Ram disk and things are much, MUCH faster. Many of my conversions require a coldstart, but luckily, the contents of the Ram disks are preserved; about the only time you will wipe them out is by loading a 512K program, a power off situation, or some quirk in your system. On a 512K CoCo3, the Ram disk feature will amaze you, and you will prob-

Continued On 10

ably be finding yourself utilizing it a LOT, as I have.

The BACKUP command has been modified. To begin with, it is twice as fast. When backing up disks, it only backs up sectors that are used, according to the GAT (Granule Allocation Table). This means that if you are backing up a disk that's only half full, it will go very quickly indeed. Even when backing up a chock-full disk, it is still twice as fast as an RSDOS or ADOS3 backup. For example, a 35-track disk to disk BACKUP using RSDOS or ADOS3 takes about a minute and a half; the same BACKUP under *EXTENDED* ADOS-3 takes 42 seconds, for a FULL 35-track disk! There is an option to override the "GAT backup" feature, just in case you want the entire disk backed up. There is another option that allows you to back up only the number of tracks you specify, such as if you have a 35-track, formatted disk you need to copy to another disk, you can just tell it to backup just 35 tracks. This makes it easy to stay compatible with your RSDOS buddies.

The DSKINI command has also been altered to work faster. The actual formatting is twice as fast and the verification is a little faster, because it appears to do a "reverse verify," instead of stepping down to track 0 and working its way up again. Although it would hardly ever be used, the DSKINI function in *EXTENDED* ADOS-3 can be used from within a BASIC program!

The MENU command: This command presents you with mini disk utility, giving you a directory on the right side of the screen and a list of functions on the left. From here, you can COPY, KILL, SCAN, LOAD(M), RUN(M) files. The up and down arrow keys scroll through the directory to the file you want to do something with, highlighting it with the color of your choice. MENCUST is the other program you customize by editing it, choosing fore and back and highlight colors, default destination drive (for COPYs), screen width for the menu, etc. MENU is very handy if you need to kill a bunch of files, examine them or whatever.

Wild card COPY and KILL: Allows the COPYING or KILLing of multiple files with one command. For instance, the command COPY"*.BIN" TO 1 would copy all the files on your disk with the extension .BIN to drive 1. There are various ways to use the "*" and "?" characters in the command, to do your bidding. There are also arguments you can append to the command to output each file to the screen, ask if you want to copy the file, kill the file after it's copied and automatically replace a file if it already exists on the destination drive. They can all be mixed and matched. I should

note that using the regular BACKUP (GAT backup) is faster than a wholesale COPY"*. *" TO 1, which would of course COPY all the files on 0 to drive 1.

DATE command: When you first turn on your computer, with *EXTENDED* ADOS-3 installed in EPROM, you will be prompted for the date, if you configured ECUST to do this. This date is appended to your directory entries anytime you SAVE a file. This doesn't have to be a date -- you can type in anything you like, up to 16 characters. If you have the Disto real-time clock or the new Smartwatch, you won't be prompted for the date -- it will get it straight from the clock, along with the time. If you want to change the DATE information in the middle of things, just type "date" and you will be prompted again. A nice feature of the DATE command is that you can "backdate" files. First you would issue the DATE command, put in the date (or whatever) you want, then issue the DATE command again, followed by the filename you want to contain that particular information. When doing a DIR, files with dates will show the string off to the right of the rest of the file information. Also, when you LLIST an entire program, the DATE string is printed at the top of the listing. DATE\$ will return whatever your DATE string is at the time.

LCOPY and LMOVE: Allows the copying and moving of BASIC program lines to other places in your program. Very handy when using a similar line many times -- saves a lot of typing.

Screen snapshot: Holding down 3 particular keys simultaneously will send a "snapshot" of your current text screen to your printer.

SKIP ON/OFF command: Allows an 80-track drive to read 35/40 track disks, by stepping twice instead of once to the next track. It is usually best not to CREATE a disk on an 80-track drive in skip mode, just use it to READ 35/40-track disks. This is due to the smaller heads on an 80-track drive, and a 40-track drive could have trouble reading the information created on an 80-track.

Key repeat: *EXTENDED* ADOS-3 has key repeat, which is very useful when editing BASIC programs. Have to go halfway into that 240-character line to change something? Just hold down the spacebar to whiz right to it. The duration between initial keypress and repeat, along with repeat speed is configured in ECUST.

Coldstart actions: First, there is a COLD command, which cold-starts your CoCo, much like powering down, then back up again. Your ECUST can be configured to take an action when a cold-start is performed or the machine is first powered up. It will

CCMDisk Service

PRESENTS



FULL YEAR (6 issues) Only \$49.95 !

In a world where *TIME* is in short supply, *ClipDisk* saves you time and prevents frustration!

A subscription to *ClipDisk* is just \$49.95 for a FULL year (6 issues)! Single issues are available as well for just \$9.95. Of course in order to get the full benefit of *ClipDisk* you'll need the corresponding issue of *Clipboard*.

All the BASIC, Assembly, BASIC09, PASCAL and C listings in each issue of *Clipboard* are available each month in *ClipDisk*. No more typo's or late night de-bugging and our easy to use OPENING MENU let's you select the program with the keyboard arrow keys.

ClipDisk is mailed first class - start your subscription today!

Name: _____

Address: _____

City: _____

State/Prov: _____

Zip/Postal Code: _____

Please charge my purchase to my (circle) VISA / MasterCard / Discover Card.

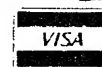
MasterCard Interbank Number

--	--	--	--

Card # _____

Exp. Date _____

Signature _____



PLEASE NOTE: All charge card orders are handled courtesy of On-Line Computer Services. Your charge card billing will show On-Line Computers and NOT CoCo Clipboard Magazine.

CoCo Clipboard Magazine

3742 U.S. 20, Box 3, Fredonia, NY 14063

Magazine specializes in Tandy computers

The May/June issue of "CoCo Clipboard Magazine," published in Fredonia, offers its readers some interesting articles, including one called "Intro to MIDI" by Dr. Lester Hands that alone is worth the \$2.75 selling price for the 68-page publication.

Hands explains that MIDI is an acronym that stands for Musical Instrument Digital Interface and that it makes it possible for a computer to communicate with a synthesizer. The informative article reports that the Color Computer has some "unique advantages for making music with a MIDI synthesizer" and that it can be done for much less than most other systems.

The article by Hands and other articles by equally expert writers for the magazine, which informs its readers about Tandy Color Computers and equipment, fill a growing need not only in Western New York but throughout the nation.

This need, of course, is information people can understand about the Color Computer market. Many readers have reported from time to time that it was hard to get information on topics that interested them. CoCo Clipboard appears to have a potentially big audience.

Editor and publisher is Theodore W. Paul Jr., Associate editor is Darlene M. Paul. Contributing writers include Rush T. Caley, Jim DeStefano, Craig Brockschmidt, Mike Dooley (KE4PC), Bob van der Poel, Bill Brady, Randy Krippner, Paul Bornemann and Shelby LaMont.

Many area hardware and software outlets advertise in the magazine.

"Clipboard brings you solid articles, programs and tutorials on BASIC, OS9, BASIC09, 'C', Multi-View, Machine language, data bases, packet radio — the list goes on and on," the magazine's management states.



Personal Computers

By LONNIE HUDKINS

Read what Lonnie Hudkins of the Buffalo News has to say about CoCo Clipboard Magazine!

- ... 'Expert Writers'
- ... 'Informs Its Readers'
- ... 'Fills A Growing Need..Nationwide'

Save 10% on C.S.B. with this coupon
Clearbrook Software Group



Information Management System

CSG IMS is a full featured relational database manager for the Color Computer and OS9.

- Interactive access to databases for quick queries.
- Includes a structured compiled language supporting program modules with full parameter passing and recursion.
- User defined screen and report formats.
- Record, index, and file sizes are virtually unlimited.
- Text, BCD floating point (14 digits), short and long integer, and date data types.

CSG IMS for CoCo2/3 OS9 L1/2 (single user) \$169.95
CSG IMS for OS9 L2 or 68000 (multi user) \$495.00
CSG IMS demo with manual \$30.00

OTHER CSG PRODUCTS:
ERINA Symbolic User-mode Debugger for OS9 \$69.00
SERINA System-mode Debugger for OS9 Level 2 \$139.00
MSF MS-DOS File Manager for CoCo3/OS9 L2 \$45.00
MSF with SDISK3 \$65.00
Shipping — N. America: \$5, Overseas: \$10

Clearbrook Software Group, Inc.
U.S.: P.O. Box 8000-499, Surma, VA 28295
CANADA: P.O. Box 8000-499, Abbotsford, B.C. V2S 6H1
Phone: (604)853-9118

OS9 is a trademark of Microsoft Systems Corp.
MS-DOS is a trademark of Microsoft Corp.



SAVE \$15 WITH THIS COUPON ON A SCSI INTERFACE WITH R.T.C.

OR \$15 ON A 2 CHANNEL DUAL COMM BOARD

FROM:

 **KEN-TON ELECTRONICS**
187 GREEN ACRES RD.
TONAWANDA, NY 14150

Don't Miss Out! save 10% on



Game Software Only

P.O. Box 6907, Burbank, CA 91510-6907
(818) 566-3571 • BBS: (818) 772-8890
Toll Free: 800 877-2232 ext. 139

<<< GIMMESOFT >>>

This certificate entitles

to 10% (Ten) off

their next purchase.

Non-transferable and not valid with any other sale prices or certificates.

This offer expires Nov. 30, 1989

CoCo Clipboard Magazine

RGB COMPUTER SYSTEMS

SAVE

\$3.00

with this coupon on your next order from RGB Computer Systems

**294 STILLWELL AVE.
KENMORE, NY 14217**

BULLETIN

Call for details on our new product which allows you to boot OS9 directly from the Hard Disk without floppy or special EPROM

Continued From 10

either look for a basic program on a drive of your choice, or issue the DOS command, automatically. This action can be configured depending on if the SPACEBAR is held down at start-up or coldstart. You can also configure NOT to do either. This is an excellent feature for anyone running an unattended BBS -- if the power went off, then came back on, your *EXTENDED* ADOS-3 EPROM could automatically boot the system back up, with no one touching the computer!

COLS command: In the 40 and 80 column screens, this command creates a column line that you can use to figure out locations for the LOCATE command.

PEEP command: This allows you to look at pages of memory and scan through them. The display is a width32 graphics sort and won't mean much to those not familiar with the way numbers are represented graphically in the 32-column mode.

The documentation is very thorough and well written. I had a little bit of trouble understanding the explanation of the CONFIG command, but it finally sunk in. Other than that, it was easy reading and quite understandable.

There are a couple of small compatibility problems with two commercial programs. The solutions are provided in the documentation. As always, the DISABLE command should solve most compatibility problems. The author, Art Flexser also provides some hints on doing partial disables, for instance, doing a disable, but retaining the Ram disks. I did have a compatibility problem with a shareware terminal program, which I told Mr. Flexser about. It is apparently a fluke in very few systems, but he did spend a great deal of time attempting to track down the problem so that this product will even be compatible with those few. We haven't yet discovered the "problem", but we did find a simple way around it without compromising the operation of the program. It is obvious that the author has painstakingly gone through just about everything, looking for those little quirks and finding a way around them. *EXTENDED* ADOS-3 shows it, in its flawless, compatible operation with just about everything under the sun.

Some might think the price is a bit steep for an "upgrade" but it's worth it, especially when one considers the five-fold increase in development time to keep *EXTENDED* ADOS-3 compatible with all your favorite programs. They say time is money. You will find out very quickly how much time you save doing things with *EXTENDED* ADOS-3 and maybe wonder why it doesn't cost more. I stand by my previous statement in the ADOS-3 review, even more so now, "You

will wonder how you ever got along without it." In my opinion, this is by far the most USEFUL product ever devised for the Color Computer.

Adapter for a remote IBM type keyboard
Bob Puppo
1574 Daws Road
Blue Bell, PA 19422
Phone (215) 272-7398

Requires: A CoCo-1, -2 or -3 and
an IBM type keyboard.
Price : \$99.00, including shipping

Reviewed by: Jim DeStafeno

Please don't get this one wrong right out of the bag. This product is not just a ribbon cable to move the CoCo keyboard out of your CoCo. In fact, this product puts the CoCo keyboard out to pasture. In its place, this adapter allows the use of an IBM type keyboard, up to fifteen feet from the CoCo, but that is only the half of it.

An adapter is needed because an IBM type keyboard is electrically different than a CoCo keyboard. Therefore a conversion of the signal between the computer and the keyboard is needed. Bob's adapter, using a 6802 micro processor, does this conversion and much more.

I remember seeing Bob and his adapter almost two years ago. At the time I thought it was a lot of money for just a fancy keyboard. Boy, was I wrong! I just didn't know what I was looking at. I've found a good keyboard is important. It's not just a luxury.

Bob says he designed the adapter because at work he uses an IBM type keyboard and at home he has a PC. Both have the same layout. Then when he switched to his CoCo, he was all thumbs due to the different layout.

I was able to relate to that, yet, the thing that made up my mind was space. My computer center (ha) is two student desks butted front to front and a low dresser next to them. The tops of one of the desks and the dresser are filled with a second CoCo, two monitors, a printer, a floppy/hard disk drive and a table lamp. A CoCo-3 sits (sat) right in the middle of the second desk. When I wasn't using the -3, it just sat there hogging most of the desk top. (As with all equipped CoCos, it was difficult to move because of all the cables running in and out.)

Now I've got my desk top back. The -3 is tucked away out of sight on the knee shelf of the second desk. When I'm using the -3, the keyboard is on the desk. When I'm not, the keyboard is over on the dresser. How nice!

Continued On 14

Continued From 13

got it tough. I'm trying to squeeze the price of a monitor between a new pair of work shoes and a brake job, and he is telling me how to spend \$99 + \$40 for two square feet of desk space."

The comment is not out of place, but a good keyboard is not to be thought of something for the CoCo user that has everything. The value of Bob's adapter is that even though it's not a single big gun like an RGB monitor or a modem/Comm package allowing communications with bulletin boards, it yields a series of many small good things.

Good things like having the defacto 101 keyboard standard, which will allow you to work at most computers without having to change gears due to a different keyboard layout. Like getting better use out of your desk top space. (Normally a 101 keyboard has a coil cord, so it can moved several feet in any direction from its normal location) and seeing your input speed increasing by 10% with a 101 keyboard; even if you are not a touch typist.

The adapter allows an additional seven more function keys than your CoCo, and you program them. Do you think your typing time would be reduced if the most used word processing functions that use two or more keys were able to be used by hitting just one function key? I was amazed.

I switched from TW-80 to Simply Better. TW-80 uses one key to delete a character, while Simply Better requires two keys. That function is now on F-3. Delete one word on the right of the cursor is F-4. Move the cursor the end of the line is on the... well you get the idea.

Of course I haven't tried all the possible combinations, and I expect there must be some that won't work, but how about your own "standard" between different word processors or even different programs like a word processor and a spread sheet? What I mean is, the delete-a-character function in

different programs could be setup on the same function key. No more hitting the wrong key because your head is running a command set different then the command set of the program in the computer.

With this kind of view, lets consider Bob's offering. So far as I know, he has no competitors, so it is either his or design and build your own. The adapter is on a board that fits under the original CoCo keyboard. The board's quality is not that of a Disto or Ken-Ton, but all the good stuff is there; gold plate, wide traces, good solder job, etc. It should last forever.

It connects to the CoCo just like the CoCo keyboard, with a trace ribbon cable. This means the CoCo's case has to taken apart. The nine page manual devotes one text and one diagrammed page to this operation. (Is there a CoCo in the land that hasn't been open at least once by its owner?) Always be sure to pull the computer's electrical plug from the 110 volt wall socket before taking the case apart.

All of the following is explained in the manual; once the top half of the case is off, just unplug the keyboard's ribbon cable and plug in the adapter's ribbon cable. Slip the adapter board down into the case to the right of the center post that was used to support the original CoCo keyboard.

There are three wires from the adapter board that get connected to the CoCo board using two alligator and one "J" clips. ("J" clips are normally used in tight places.) It would be better if a second "J" clip was used at the power supply connect point. The Tandy 512K memory upgrade board pretty well covers this area. Bob said he would consider doing it.

While on the subject of the power supply, we are always concerned about the CoCo's power supply over heating when adding goodies. Of late add-On suppliers have taken a new tact when they can. Bob has done it too.

Continued On 15

Check Account Information System

Not just another checkbook program but a user friendly, menu driven, disk based information system. Keep track of deposits, checks, ATM withdrawals and other account transactions. Define up to 36 categories to monitor expenses. Set up automatic transactions for such items as direct deposits and deductions. Balance your account(s) in minutes! Other features include multi-drive capability, display and print options, check search on any field, edit and delete capability and more.

CoCo 3 compatible
Printer optional



After Five Software
P.O. Box 210975
Columbia, SC 29221-0975
(803) 788-5995

Send check or M.O. for
\$34.95 plus \$3.00 S/H
COD orders: add \$2.00
(SC res. add 5% sales tax)

Untangle your checking account with CAIS!

The new method depends on the fact that the power supply transformer can put out a lot more power than the regulator circuit can consume before over heating. The trick is to tap into the power before it is regulated, and then regulate it on the add-on board. A little more expensive, but its worth it to be worry-free about over heating.

The manual suggests several paths to lead the coil cord out of the CoCo's case. I cut a notch in the side of lower case half, right at the split line. The keyboard now sits on my working desk and can be moved to any place in the area.

Do you get invitations in the mail to go to a local computer fairs. You now have a reason to go; to get a good deal on a keyboard. In most cases you can check out the feel, get to use a number key pad, etc. A XT compatible board can be gotten today for \$40 or less.

I didn't (don't) know very much about keyboards and as Bob says, "I don't normally supply keyboards, but on occasion, if I find a good buy, I can." The rule of thumb on getting a keyboard that works with the adapter is; it must compatible with an IBM PC-XT (or XT clone) computer.

There is more than one key layout pattern that is XT compatible. The layout that is used with most all computers is called the 101 layout. Based on the fact that it is the most often used, that is the layout I recommend.

A 101 board is the standard and its got all the goodies. A number pad. Much faster number input. A "CapsLock" key. No more need to hit Shift/0 to lock in upper case, just one key press to turn it ON or OFF. No more Shift/@ to stop scrolling, just hit the Scroll Lock key. There are sets of Ctrl and Alt keys on each side of the keyboard. It has big Enter, Shift and Backspace keys and the arrow keys are grouped together in one spot. And incidentally, the front row of keys are only a inch above the desk top; as opposed to the CoCo's two and a half inches. Much less tiring. "All front row seating."

Since Bob's adapter uses firmware to gets its job done and thus uses no computer memory, he used the opportunity to add some goodies. The programmable function keys fit this category. All keys can be made to repeat by hitting Function 10 and the 4 keys. It is turned OFF the same way. RESET, hard and soft, is done right from the keyboard. No need to reach around behind the computer. There are two sets of 22 pre-programmed BASIC words that are called from just two key presses for each word. One set

is for use with RS-BASIC and the other for OS-9/09BASIC.

Upon start up the operator is presented with a menu. It asks for a setup choice between OS-9 Level I/DOS, OS-9 Level II/DOS, RS-BASIC, OS-9 Level I/"*", RS-BASIC/"*". The first two setup the keyboard for the indicated system and then execute the DOS command. The last two make the indicated setup and then auto-run a program you have previously put on your disk system, called "*". "*" can be anything you make it. It could be another menu, a loader program for your word processor, etc. A very nice touch.

Since the menu/auto execute feature would interfere with RGB-DOS's auto execute feature, Bob will supply the EPROM without the menu display. In fact, there is no real loss because the setup choices can still be selected at any time with two key presses. Only the auto execute/run is deleted. Since RGB-DOS already has it, nothing is lost.

What's on the down side? The function key action you setup is destroyed by a cold RESET and can not be SAVEed and played back in. I would have chosen some different preprogrammed RS-BASIC words, and would not have included a space after those that don't need one. I also wonder if 44 words couldn't be preprogrammed by using the shift key too. (Last time I talked with Bob, he said he was considering setting up the 101's six dedicated word processing keys to work with the RS-BASIC line editor.)

The price looks big, but it is hardware, not software. Maybe its biggest fault is the lack of single a blow your socks off feature. However, if all the features are considered together, you realize a proper keyboard with all the add-ons is a real power tool for the serious CoCo user.

Bob's adapter works flawlessly with and for the user. Would I recommend getting one before a printer, single floppy drive or a monochrome monitor? No. Before a hard drive or a modem setup or OS-9, etc.? That choice depends on your "normal" use of your CoCo. I never realized what a good keyboard would do for my word processing action. Conclusion? Anyone want to buy a CoCo-3 keyboard...cheap?

OS9 File System Repack

Burke & Burke

PO Box 58342

Renton, WA 98058

Cost: \$29.95

Reviewed by Mike Guzzi

If I was asked to sum up this program in one sentence it would have to be "A program

CoCo Clipboard Magazine

Published Bi-Monthly

THE NEWEST, MOST IN-DEPTH MAGAZINE FOR TANDY'S COLOR COMPUTER 2 & 3

If you've been looking for a CoCo magazine that takes a No Nonsense approach to the Color Computer, then CoCo Clipboard Magazine is for you!

If you're getting tired of lo-res block graphics applications, reviews that still leave you guessing, and the same old boring approach to serious computing, then CoCo Clipboard Magazine is for you!

Clipboard brings you solid articles, programs and tutorials on BASIC, OS9, BASIC09, "C," MultiView, Machine language, databases, packet radio - the list goes on and on. Plus we're up-to-date on what's happening with the CoCo. We were the first to bring you IN-DEPTH reviews on VIP Writer III, RGB Hard Drives and Tandy, Home Publisher

6 - 2 - 1

\$90.00

SAVE 15% FROM LIST PRICE

Our best money saving offer yet, it's 6-2-1! "6-2-1" is our best way to save you money! Six back issues of *Clipboard*, a two-year subscription to *Clipboard* AND a one year subscription to *ClipDisk*. Normally \$106.95, now you can save 15%, only \$90.00! To order simply check the "6-2-1" box on the order form or call (716) 679-0126.

MC - VISA - Discover accepted.

And now you can phone in your order!
We accept VISA, MasterCard and Discover - (716) 679-0126 — 9 a.m. to 9 p.m. Monday thru Saturday!

I am: _____ Subscribing
_____ Renewing
_____ Gift Subscription

Name: _____

Address: _____

City: _____

State/Prov: _____

Zip/Postal Code _____



ONLY \$38.00



To SUBSCRIBE and
receive 5 Recent
BACK ISSUES

All orders must be paid in U.S. Funds

★★	_____	1 year Clipboard in U.S.A.	\$18.00	_____
	_____	2 year Clipboard in U.S.A.	\$34.00	_____
	_____	1 year Clipboard in Canada	\$21.00	_____
	_____	1 year Clipboard all Foreign	\$27.00	_____
	_____	6-2-1 Special in U.S.A.	\$90.00	_____
	_____	6-2-1 Special in Canada	\$97.25	_____
	_____	6-2-1 Special all Foreign	\$116.00	_____
	_____	6 most recent back issues U.S.A. or Canada	\$20.00	_____
★★	_____	5 most recent back issues all Foreign	\$27.00	_____
	_____	1 year ClipDisk U.S.A. or Canada	\$49.95	_____
	_____	1 year ClipDisk Foreign	\$55.95	_____
		TOTAL		_____

Please charge my purchase to my (circle) VISA / MasterCard / Discover Card.

MasterCard Interbank Number

--	--	--	--



Card # _____

Exp. Date _____

Signature _____



PLEASE NOTE: All charge card orders are handled courtesy of On-Line Computer Services. Your charge card billing will show On-Line Computers and NOT CoCo Clipboard Magazine.

CoCo Clipboard Magazine

3742 U.S. 20, Box 3, Fredonia, NY 14063

Continued From 15

born out of necessity". This set of utilities, which is a new product from Burke & Burke, fills a major hole in my utility box. These utilities are designed to take any OS9 disk no matter if it is floppy or hard and re-organize it to reverse the effects of OS9 splitting files into smaller segments and slowing down access to your files. It will not only gather all your free space together but will reorganize your files so they are no longer fragmented. This speeds up disk access and cuts back on mechanical wear and tear, especially on your hard drive.

The programs will work under both Level I and Level II OS9. All utilities have a help option by using "-?" or "-h" as a parameter. They will work with ANY floppy and/or hard disk system which is excellent since there are many types out there. As a small hint about the manual I removed the clip it came in and placed it in the binder with my Development pak so I can flip through the pages much easier.

My system setup is as follows:

512K Tandy Color Computer III
Sardis DMC No-Halt floppy controller
Drive 0 = Double sided 40 track drive
Drive 1 = Double sided 80 track drive
Drive 2 = Double sided 80 Track drive 3.5"
LR Tech Hard disk interface with Xebac
S1410A Controller
Seagate ST 238R and Seagate ST 225 hard drives

These utilities will run on ANY hard or floppy system. It comes on one standard format disk (35 track single sided) and it's not copy-protected so you can make backups and store the originals away in a safe place.

The repack system does not require any disk space to run but it is very explicit in that it must have exclusive access to the drive it is fixing. If you read or write to that drive while this utility is running you can confuse it and destroy your data. As long as you can isolate the drive this program will work as a background task. All you have to do is knock down its priority since it starts with a high priority.

The worse your fragmentation is the longer this utility will take to fix it. My first hard drive was the worst and the second hard drive was still in fair shape. These are the actual free reports before and after I used the utilities just to give you some idea what these utilities had to endure.

This is the first hard drive report:

Capacity: 78,720 sectors 44,474 free,
largest block 4,076

Second hard disk report:

Capacity: 78,720 sectors 36,759 free,
largest block 35,537

Granted a free report will not show file fragmentation. I had to use a public domain utility that shows the map and flags different things. I first ran the utility on the second hard drive and that took 5 hours, 22 minutes to complete its task and free reported the free space and largest block to be the same. Also using that utility to map out the hard disk showed it neatly packed. The files stayed in their general order so it was like nothing happened. Running this on my main drive took a whopping 12 hours but considering how bad it was I knew it would be at least twice as long as the first drive was. Again it was neatly packed and it operated much quieter (less head movement and faster access to my files). Then I ran the utility again on the hard drive to see how long it would take. It completed the job in 7 minutes. This means it is best to run the utilities periodically such as once a week or month when it will only require a few minutes rather than hours when the frgmentation is real bad. The MS-DOS computers also have such utilities and although I do not own an MS-DOS machine but from talking to people who have these utilities the PC's take about the same amount of time as the CoCo's version.

The utilities on the disk include the following.

- BA - Sets bits in allocation map
- BD - clears(resets) bits in allocation map
- CCHECK - Scans disk for defective sectors & identifies files stored there
- HDB - Back up a hard/floppy disk to multiple floppies
- HDR - restore hard/floppy disk from multiple disks
- REPACK - optimizes hard or floppy disk (main program)
- STASH - marks files/directories that should not be repacked ie: OS9boot
- ZAP - Erases a file's directory entry without de-allocating sectors
- FCHECK - generates a file fragmentation report

CCHECK is a program that will non-destructively read and write every sector on a drive. It is much more sensitive then Format's verification and can usually detect marginal sectors. It can by option set the bitmap so it can automatically lock out bad sectors it finds. You can safely abort

Continued On 18

this command with BREAK and it will not destroy any sectors.

BA and BD allow you to manually set or reset bits in the allocation map which can be for many reasons which could be for non OS9 partitions and so forth. You must use these with care since you can confuse the system if you do not be careful.

HDB and HDR are utilities to backup and restore a large floppy or hard disk to multiple floppies. It is always wise to backup a hard disk since mishap can occur and you would be left without any data on the drive. You must pre-format the disks to hold the backup files and you may use disks that have bad sectors since these utilities will go around them. Now lets say you make a full backup and you DO clobber the hard disk, well you can restore it and rest easy. A good point that comes up is "what happens if one of my backup disks suddenly has a bad sector on it AFTER I backed up the hard drive?" I have used several backup utilities and some will simply die at that point and your backup disks are useless. These utilities however are much smarter than that. It will attempt to re-read the bad sector and if it still cannot get it then it will skip it.. This means you will only lose part of 1 whole file. This is not bad since a hard disk can easily have 2000 or more files. These backup utilities can also compress the data to save on the number of floppies needed but it will mean it will take longer to do the backup. Also they are a streaming type backup and not file by file so the drive will be exactly like it was before backup as when it is restored.

REPACK This is the utility which will reorganize your hard or floppy disk. It not only regroups files but also will group together the free space so it will cut down on access time and wear and tear of your drive. You can set it for single pass mode which only makes one pass over the disk. It will not completely de-fragment the drive but will improve it a bit. This obviously means it will not take as long. It would only take about 15 minutes for a 20 meg disk compared to 12 hours for a complete repack. You can safely abort it by hitting BREAK once. It will not stop until it can safely exit and then it will abort. However if you do hit BREAK a second time it will abort immediately and you have a very high risk of file damage. It must also have exclusive access to the drive being repacked. If you read or write while it is operating you can confuse it and cause damage. It does not require any free disk space so you can repack disks that are full.

STASH Hides a file or directory either

to make them hidden files or to prevent repack from moving the file. A good example of this is OS9boot which must not be moved from its present location. You can later go back and retrieve the file. It stores the file information in the SYS directory so if you erase that file you cannot restore the hidden files.

ZAP This one also loses a file or directory but you cannot restore it later on. Essentially if you zap a file you are committed.

Notes about the manual

They give plenty of ways to contact them such as Delphi and CompuServe accounts if you can't call them. However they answered all my questions when I called. They also give some inside information on OS9 file structure. They also explain why fragmentation occurs which is useful to know since it has to come from somewhere. Lastly they give some other applications for their utility set which have nothing to do with repacking a drive.

In summary this is an excellent set of utilities to manage a large floppy and/or hard disk. With so many hard drives out there a set of utilities like this is needed and definitely is on my "must have" list. The painful ways to fix this problem with many hours of formatting and swapping disks in & out is saved with these utilities.

Floppy Disk Drive Controller
CRC Ordinatater, Inc. (Disto)
11 Boul. Des Laurentides
Laval, Que
Canada H7G 2S3
Phone (514) 967-0195

Requirements: A CoCo 1, 2 or 3 and a CoCo Compatible Floppy Disk Drive with Cable

Price: \$74.95 US plus \$4.00 S&H

Reviewed by: Jim DeStafeno

CRC produces three floppy drive controllers. Tandy thinks so much of their products the no-halt model can be ordered in any Tandy store. Of the three, this review is of their "Mini Controller 1"; their least expensive, latest controller offering.

As the CoCo itself has been developing over the years, so too has its floppy drive controllers. First we had a plain vanilla controller. It did its job, but nothing more. Then came a "2 slot" version with manual switch. With it, one could use one of two different DOS's at the flip of a switch and a RESET. Then CRC introduced a

Continued On 20

NEW

BEST PUBLIC DOMAIN PROGRAMS !

FROM T&D SUBSCRIPTION SOFTWARE

NEW

T&D SUBSCRIPTION SOFTWARE HAS ACCUMULATED OVER 1,000 PUBLIC DOMAIN PROGRAMS FOR THE COLOR COMPUTER.

WE ARE SELLING 630 OF THE BEST. JUST THE GOOD STUFF !

Music 1-7

- M1 - 8 Utilities & 8 Songs
- M2 - 17 Musica Files
- M3 - 16 Musica Files
- M4 - 16 Musica Files
- M5 - 25 Orchestra Files
- M6 - 23 .Bin Files Ready To Run
- M7 - 23 .Bin Files Ready To Run

ADVENTURES 1,2

Each Disk/Tape Contains
9 Great Adventures
Ready To Run

Order A1 Or A2

TELECOMMUNICATIONS 1-3

- T1 - Haysae, Kermit, Mterm
- T2 - Cobster Terminal Package
- T3 - Mikeyter Terminal Package



EDUCATION 1-4

- E1 - 12 Programs For Young Kids
- E2 - 12 Programs For High School Kids
- E3 - 11 Programs Teaching The Coco'S Commands
- E4 - 5 Graphics Programs About Australia

GRAPHICS 1-4

- GR1 - 12 Basic Graphic Programs
- GR2 - 12 Basic Graphic Programs
- GR3 - 9 Coco 3 Graphic Programs
- GR4 - 22 Coco Max Pictures
- GR5 - 22 Coco Max Pictures
- GR6 - 22 Coco Max Pictures
- GR7 - 15 Coco Max Pictures
- GR8 - 22 .Bin Pictures
- GR9 - 22 .Bin Pictures
- GR10 - 14 Large .Bin Pictures
- GR11 - 8 Mge Pictures
- GR12 - Coco Max 3 Pictures
- GR13 - Macpaint Graphic Editor
- GR14 - 5 Macintosh Pictures

HOME MANAGEMENT 1-4

• 12 Programs Each Disk/Tape •

- H1 - Checkbook, Database, Word Processor, +
- H2 - Cash Journal, Investments, Mail List, +
- H3 - Finance, Int. Rates, Stocks, +
- H4 - Spelling Fix, Spelling Checker, +

GAMES 1-11

• Each Disk/Tape Contains 12 Programs •

- GA1 - 3Dlctac, Missile, Poker, Tycoon, +
- GA2 - Chess, Motojump, Rider, Slots, +
- GA3 - Battship, Golf, Lander, Robots, +
- GA4 - Abm, Cartel, Subchase, Trek, +
- GA5 - Blackjack, Laser, Raceway, Utopian, +
- GA6 - Kings, Navyguns, Poolgame, Subship, +
- GA7 - Connect4, F-16, Life, Mazeland, +
- GA8 - Chute, Football, Othello, Slither, +
- GA9 - Civilwar, Flight, Prix, Stock, +
- GA10 - Cave, Fly, Pedro, Scramble, +
- GA11 - Bunkers, Craps, Gunner, Nukeattk, +

UTILITIES 1-8

• 12 Programs Each, 1-4 Require Disk •

- U1 - Backup35, Diskzapr, Romcopy, Timer, +
- U2 - Customize, Diskfix, Disktest, Multback, +
- U3 - Diskaid, Diskbry, Midata, Playmac, +
- U4 - Macpix, Stat-Log, Unarc, Unmaster, +
- U5 - Assemblr, Mcbase, Squeezw, Writer, +
- U6 - Chr-Ed3, Hqcolor, Minidos, Updnlst, +
- U7 - Head Print With 30 Mini Pictures
- U8 - Fig Forth Language With Tutorial

**BUY ALL 53
DISKS/TAPES FOR
ONLY \$145.00 !**

MAIL TO:

T&D Subscription Software
2490 Miles Standish Drive
Holland, Michigan 49424
(616) 399-9648

Call or write for a **FREE** catalog !

PRICES:

1- 5 disks/tapes....\$6.00 each
6 or more.....\$5.00 each
All 53 disks/tapes \$145.00



• WE SEND 1ST CLASS - NO CHARGE •

• PERSONAL CHECKS WELCOME •

Name _____

Address _____

City _____ State _____ Zip _____

Credit Card # _____

Expires _____

TOTAL AMOUNT \$ _____

CIRCLE ISSUES DESIRED

M1	GR1	E1	U1	GA1
M2	GR2	E2	U2	GA2
M3	GR3	E3	U3	GA3
M4	GR4	E4	U4	GA4
M5	GR5		U5	GA5
M6	GR6	H1	U6	GA6
M7	GR7	H2	U7	GA7
	GR8	H3	U8	GA8
A1	GR9	H4		GA9
A2	GR10			GA10
T1	GR11			GA11
T2	GR12			
T3	GR13			
	GR14			

PLEASE CIRCLE

TAPE DISK

software (poke) controlled 4 slot version. This unit was (is) praised due to very low power consumption. The power trick paved the way for the "Y" cable; which just about put the Multi-Pak out of business.

Next, the CoCo-3 was introduced and keeping pace with the need, CRC introduced a 4 slot controller with no-halt. This improvement allowed the OS-9 users to input on the keyboard during disk I/O. In addition, an on-board clock would no longer lose time due to the CPU's diversion during I/O chores. (A little known fact, a no-halt floppy controller is not needed when using a SCSI hard disk controller. No-halt is built right in the interface.)

CRC's newest floppy controller goes back to square one, 2 DOS slots with manual switch, but with an eye on price. However, just because it is the least expensive of the line, don't think it is on the low end of quality or performance. For my dollar this is the controller of choice.

The first thing you will notice is the size; nearly 2 inches shorter than the normal controller. Its nice to see a manufacturer addressing one of the most often cited CoCo complaints. Your CoCo equipped with the Mini Controller will have 2 inches less sticking out its right side.

The next unusual thing you will see is a little handle on one side of the controller. It is used to switch between the two slots. You'll also see a small phillips head screw on each side of the controller. Since it has 2 slots, the user is expected to open the box to install different DOS EPROMS. Detail on that trick below.

The controller is made of strong white molded ABS plastic and has a pebbled surface that matches the texture of the area around the CoCo's keyboard.

Before plugging the controller in, it would be a good idea to read through the distinctive black on yellow manual. There is just a page and a quarter of well written instructions detailing the features, installation and operation.

The features list makes the old 2 sloter a real antique. This new product includes all the what-we-now-expect "good stuff":

- Gold Connector Contacts, to eliminate corrosion which if unchecked causes massive I/O errors.

- Low Power Draw, comes into play when the user piles on electrical "extras" like 512K RAM, hard disk drive interface, a clock, etc. Installed extras put a higher demand on the computer's power supply. Though the CoCo-2 can produce more watts than the 3, neither will fry an egg. There-

fore it is important to select those extras that have the lowest possible power draw.

- Compatibility, with the original Tandy product specs. This feature not only means the unit works with all the floppy drives intended for use with the CoCo, but also works with all the CoCo's. That means if one has RGB-DOS in the operating slot or OS-9, disk I/O in the high speed mode will work just fine. In addition the controller offers one of the slots that will take two different size EPROMS, either a 24 or 28 pin, therefore...

- Any controller must have at least one DOS EPROM installed. This CRC offering includes C-DOS or Tandy's DECB at no added cost; your choice. A DOS EPROM will cost at least \$15.00, often more.

- The other feature is quality and experience. The board is a work of art I expect NASA would be proud to use.

Getting it installed and working is as simple as can be. Remove the two screws on the side of the box, lift off the lid and pop in the DOSes of choice. I use RGB-DOS and C-DOS. I haven't found any program that won't run with one or the other.

Put the lid back on, be sure the computer and floppy drive are turned OFF, plug the controller in the computer and the drive's cable in the controller, and turn all ON. The screen should light up with the message of the particular DOS installed.

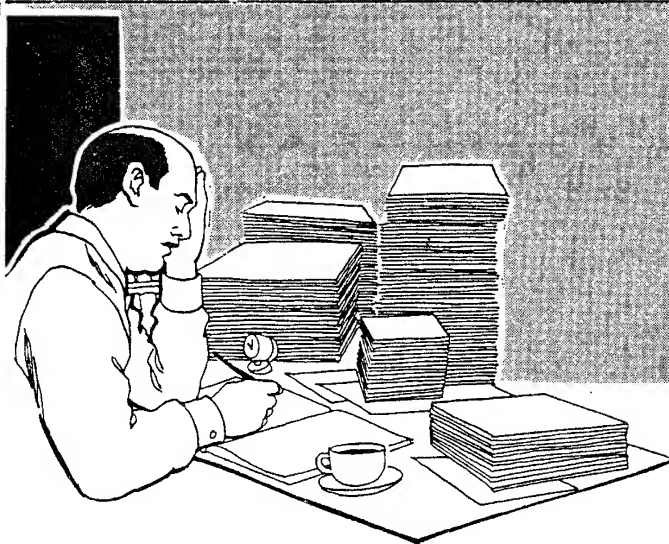
If the expected screen message doesn't show, there are three most likely problems.

First: One or more of the three units are not plugged in to the wall and/or turned ON.

Second: maybe one of the EPROM's pin's was misaligned during installation. Turn everything OFF, disconnect, pull the lid, check the pins in a good light. If a pin or two is not seated properly pull the EPROM, straighten the offenders with light pressure from a finger nail and reinstall; watching carefully to be sure all the pins are going in the socket correctly.

The third possibility is a ribbon connector installed upside down. It is not logical to do that if the controller is being plugged in the computer, however the setup can look questionable when plugging into a "Y" cable. In both cases, just make sure the computer and controller are top side (pretty side) up.

As easy as it is to plug the controller in the computer correctly, plugging in the drive connector correctly is difficult. Unless the disk drive supplier instructions tellshow to identify wire #1 and where it should be positioned, you are on your own. I guess I have had the drive connector installed upside down more than once with no damaging results. So if all else is correct, turn everything OFF flip the cable



Do Some Ad Rates Keep You Up At Night?

Just what does it cost to reach the CoCo Market Place?

- Fact #1: There's been a LOT of talk of late about the cost of reaching Color Computer users these days. Lots of numbers get tossed about - you know cost per hundred or cost per thousand. The problem is you still have to come up with hundreds of dollars just to get a single 1/4 page ad in some magazines.
- Fact #2: One shot ads usually don't produce enough return. The pros know that it takes a minimum of 3 insertions to see results.
- Fact #3: Unless you have a rich uncle, or hit the lottery, buying space in other publications for 3 insertions takes a LOT of money. To buy 3 insertions, 1/4 page in *Clipboard* is only \$50.00 / per ad.
- Fact #4: Only *Clipboard* offers you money saving incentives to lower your ad bill even more. Plus we offer extended billing, fast friendly service and you talk to the "owners" not order takers.
- Fact #5: The number of advertisers buying space in *Clipboard* increases with every issue. Our subscriber count (which doesn't include rack sales as others do) goes up every issue. Does it make any sense to buy space in a magazine with declining numbers?

Stop staying up nights trying to figure out how to stay in the CoCo market!
CoCo *Clipboard* Magazines Media Ad Pak and ALL the facts is only a phone call away.

(716) 679-0126 9am to 9pm Eastern - Mon. thru Sat.

Continued From 20

connector and turn all back ON. However, don't blame me or CCM if all blows up. It may be better to question the drive supplier.

The manual stresses the need to care for the static electricity problem and being sure all your equipment is OFF when plugging the controller in or out of the computer, or the drive cable in or out of the controller. I've never had any trouble. I just touch noncritical parts of each item together before and while I am working.

I keep a finger on the fat grounding tabs on the computer end of the board and another finger on the foam the EPROM is stuck in. Then I take the EPROM out of the foam with my thumb and forefinger, and touch my little finger to each of the grounding tabs. While putting the EPROM in the socket, I keep a finger of my free hand on one of the grounding tabs and try to keep my fingers from touching the pins of the EPROM. However, sometimes it happens. As I said, I've never blown an EPROM, but I expect it to happen everytime I do it.

Anyway, once you see the screen message you are in business. When you want to change DOSes, CRC says to be sure all comes up correctly after the change, turn the computer OFF, flip the switch and turn the computer back ON.

I guess there is no question that I recommend the purchase of the CRC Mini Floppy Disk Drive Controller. In fact, I

put it as my first choice of all controllers offered for the CoCo. Considering the included DOS, it is the least expensive. Its quality is beyond reproach, and the design features have no peer except for the lack of no-halt. However, I expect most every serious CoCo user will opt for a hard disk drive sooner or later. When they do, the informed purchases will include a SCSI interface, and those interfaces include the no-halt feature.

What a novel combination. The best for the novice due to price and the best for the seasoned user because of the features. What more could one ask for?

Ultra-Cat
Tothian Software, Inc.
Box 663
Rimersburg, PA 16248

Pgm. Type: Disk cataloger
Requires : 64K Coco I/II, 128K Coco 3, 1 drive
Price : \$24.95

Reviewed by: Dan Weaver

ULTRA-CAT: HELP HAS ARRIVED FOR EVEN THE MOST DISORGANIZED DISK COLLECTION!

A recent issue of PC Computing Magazine devoted several articles to the difficulties of finding a particular file when you have hundreds or even thousands of

Continued On 22

files on a hard disk. I have found that it is even more difficult to find a "lost" file if your computer is a CoCo with one single sided floppy. It is more difficult because you can not organize your disks by using subdirectories unless you use OS-9 or some DOS other than Disk BASIC. It is also harder to look through 100 floppy disks for a particular file than it is through a single hard disk.

Tothian Software has created a hybrid BASIC and ML program called ULTRA-CAT which creates a catalog of all your disks. You will need at least a 64K CoCo, and you must also own or be willing to purchase a companion Tothian program called ULTRA-BAS. ULTRA-CAT creates ULTRA-BAS files containing information about all of your disks and the programs on them. ULTRA-BAS is an easy to use but effective database program that can be used for much more than just keeping track of your disks. You can purchase both programs as a package for \$39.95, or you can buy ULTRA-CAT separately for \$24.95.

ULTRA-CAT is very simple to use. The program has only one menu containing six options. Option one lets you switch from one drive to two drives, option two gives you a directory reading of drive 0, your third choice gives you a directory reading of drive 1, and option six allows you to exit the program. This leaves the two options that you will use the most.

Option four reads the directory of your disk and creates a seven category ULTRA-BAS file. The categories are file name, extension, type of file (ML, BASIC, etc.) file format (ASCII or binary), file size, disk name and amount of free space on it, and a comment category which initially will have no information in it.

Option five enables you to merge your ULTRA-BAS disk catalog files. This means you can create a very large file containing information about all your programs and files. There is a 32K limit, but even at that, you can have a file containing information about 1000 programs. This entire file can be in memory at one time.

Before using ULTRA-CAT, you will need to give each disk a name or a number. Whenever you catalog a disk, ULTRA-CAT will prompt you for the name of that disk. Later on, if you have forgotten what disk a particular file is on, you can find it easily by using the ULTRA-BAS search feature. You can search your file by using any of the seven categories. If you search by file name, you only have to use part of the name. Wildcards, however, are not allowed. When the computer finds the file that you are looking for, it gives you all the information about it, including what disk it is on.

It takes very little time to catalog your disks. What takes time is entering comments about each program should you choose to do that using ULTRA-BAS. You may also delete or change some of the categories. Using ULTRA-BAS you may alphabetize your file, sort it, or print it out. ULTRA-BAS does not allow you to easily change your printer baud rate from within the program, so set it before you start. If you do forget to set it, you can press BREAK, set the baud rate, and return to the program by typing GOTO 7000. In fact any time you get any kind of error message, the program will abort, but you can return to it, without losing any data, by typing GOTO 7000.

There are a couple of things that you need to consider before you purchase ULTRA-CAT. First, it can't catalog OS-9 disks. This is not a major problem for most CoCo users. Secondly, it will not catalog double sided disks. For example, the backside of my drive 0 is drive 2. ULTRA-CAT only recognizes drive 0 and 1. I reconfigured the backside of my drive as drive 1, but when I ran ULTRA-CAT, I was still unable to catalog the backside of my disk.

It would also be nice if Tothian would produce a CoCo 3 version of ULTRA-CAT and ULTRA-BAS that would take advantage of the extra memory to create larger files, provide support for an 80 column monitor, and have extensive error trapping so that the program would not abort when errors are made. Support for various disk drive configurations would also be a plus.

Regardless of any shortcomings that ULTRA-CAT has, I still recommend it highly to anyone who is having difficulty keeping track of their programs and files. If you don't already own it, ULTRA-BAS will only cost you an extra \$15, and you can't ordinarily buy a database as good as ULTRA-BAS for such a small amount. You might be interested to know also that Tothian has developed other programs that are part of the ULTRA series.

**CoCo
Clipboard
Magazine™**

Paid Editorial by Terry Simons, editor of the Mid Iowa CoCo's newsletter "The Upgrade"; where this article first appeared. Terry has also been active in CoCo Software authorship and sales.

America the Free ! One Nation Under God

We've come along way my fellow Americans. Our educational systems have produced intelligence to new highs generally. If a law is passed; and enough ignore it. It can't be enforced. The reality of a democracy is simply whatever we the people want; we the people will have.

Including:

We want the right to leave our seat belts

Terry g

unfastened. Even though overwhelming figures show; using them would most likely save serious injury or our lives. We want the freedom to ignore the grief of those who love us.

We want the right to bash our heads on the pavement when riding motor bikes. Masculinity and living stupid are synonymous, aren't they?

We want the right to own automatic assault weapons.

Which have about as much to do with personal protection and hunting firearms as owning a tank. After all the children in "our school" haven't been massacred yet.

We want the right to use drugs. Even if we operate passenger trains. Or at least be free of tests that would show us up, despite the previous disasters caused. Anyway it's the dealers not our fault.

We seem to be loosing the right to get drunk and kill people.

Some group called M.A.D. is getting upset because of their dead children.

We see many parents having the right to sexually molest their children; upheld by some of the judges we intrust with making such decisions of wisdom.

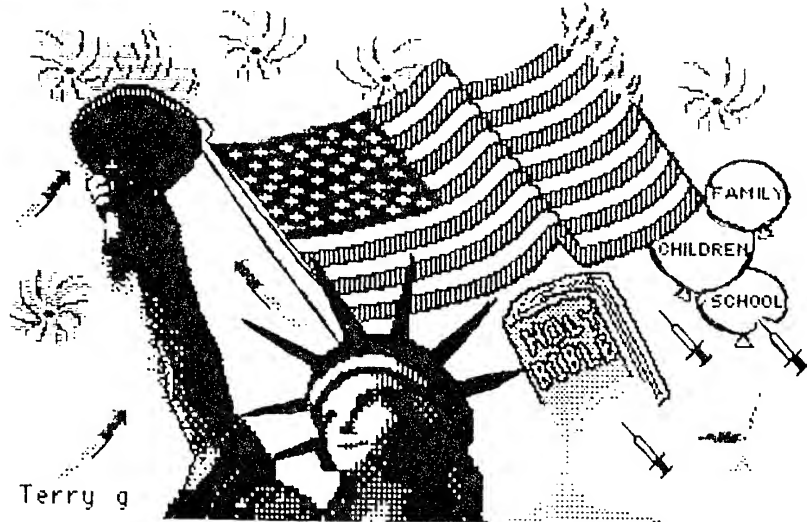
Freedom can very well be: "another word for nothing left to loose".

Above all else, our children are guaranteed freedom from seeing anything suggesting the reality of our God; for seven of their 12 to 14 waking hours. As part of our higher education system.

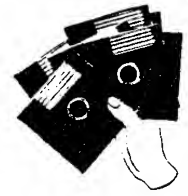
Go ahead and just chalk it up to irony. As prayers became absent from our classrooms, drugs became more prevalent in the hallways. To omit God from a part of a child's day, is to teach the omission of God.

Perhaps it is fitting that our high court has held it's ok to desecrate our flag. As we bulk at the idea of our children saying: "one nation under God". Are we saying "hearing about God is like booze; you need to be 18 or 21 to handle it"?

Personally; quoting chapter and verse for some reason, goes against my grain. I always feel like someone is trying to be God to me. I do however very seriously take to heart it's passages and their meaning. It does appear Christ became very upset when the children were prevented from seeing Him. I remember something about a millstone about the neck of those who would cause harm to children. Take a look for yourself; see what you think?



Random Numbers



Bob van der Poel

Random numbers have many computer applications. I'm sure you all know that most games rely on random numbers, but many application (for Rush this means "serious") programs also make use of them. Here are a few examples:

- Some partition sort algorithms use a random number to create an initial partition,
- A print formatter (VPRINT) I am in the process of finishing off uses a random number to keep line justification balanced,
- Educational programs which do quizzing use random numbers to select questions,
- Computer simulations (especially queuing) depend on random numbers to simulate real world events.

With this in mind, let's examine Basic09's RND() function.

First, we should be aware that RND() always returns a REAL (or floating point) number. Prove this to yourself by running the following program:

```
PROCEDURE rnd1
FOR t=1 TO 20
PRINT RND(100)
NEXT t
```

Note that the results are always positive and always have a decimal portion. If you wish a value between 0 and 1, then use RND(0). At first blush it appears that RND(1) gives the same results as RND(0) however, sometimes a 1.0 will be returned.

Random numbers in computers are not really random. For this reason they are often referred to as "pseudo-random." This is because the method used to generate a value depends on a predefined mathematical sequence. If we know the original value of the number (the "seed") and the algorithm used we can predict the values which will be returned. Actually, it's quite easy to have Basic09 replicate a series of "random numbers". The following program will print the same 10 "random numbers" every time it is run:

```
PROCEDURE rnd2
```

```
t=RND(-20)
FOR t=1 TO 10
PRINT RND(100)
NEXT t
```

The trick here is the RND(-20) statement. Try it with other negative values. You'll see that different values will generate different series.

Hmmm, here's an idea: build a coding machine which multiplies text by predictable "random" values; to decode the second user only needs to know the negative number to use the program. Even the program could be public since without the key it would be nearly impossible to decode the message.

One of the problems with most random number generators is that on startup they always return the same sequence of numbers. Basic09 is no different. For example, whenever I start Basic09 RND(100) always returns 42.310425. For this reason I have written the following RANDOMIZE routine. It simply uses the current system time to reseed the random number generator. One more reason to set the system time when starting BASIC09.

```
PROCEDURE randomize
DIM t:INTEGER
FOR t=1 TO LEN(DATE$)
A=A+ASC(MID$(DATE$,t,1))
NEXT t
A=RND(A)
END
```

When you use RND you should remember that RND(5) will never return a value of 5--the values will be BETWEEN 0 and 5. For your reference, here are a few sample RND calls and the range returned:

RND(5)	0 to 4.999999
FIX(RND(5))	0 to 5
FIX(RND(4))+1	1 to 5

Note that if A is an INTEGER then RND(5) will assign values from 0 to 5.

The program RndTest (see listing) tests the distribution of random values Basic09 generates. To run it you will need an 80 x

van der Poel Continues on 25

van der Poel Continued from 24

24 text screen. Try changing the line which reads:

```
N=RND(79)
to N=-8*LOG(RND(0))
```

Note how the distribution of the values changes. This algorithm is used in queuing simulations when the chances of 1 person arriving is greater than 20, etc.

The listing ShowDeal shows how random numbers can be used to simulate a deck of cards. Even if you are not interested in card games you should follow the logic through since a similar method can be used to select test questions, etc.

Speaking of test questions, one of my children was having problems with her basic math skills. Clearly, she needed more practice, but writing out the sheets by hand was a bit too tedious. So I wrote a quickie Basic09 program to do it for me. MathSheet creates a worksheet with a series of simple math questions on it. Follow the prompts for the different types of sheets. MathSheet uses logic very similar to the

card program so that, unlike many programs of this type which I have seen, the program does not repeat questions. Have a look at the logic to see why.

This month's challenge: How many other uses can you find for random numbers. Let me know and I'll feature some of the best or silliest in a future column--remember, computing should be fun.

You can write me at either:

P.O. Box 57,
Wynndel, B.C., or
Canada V0B 2N0

P.O. Box 355
Porthill, ID
USA 83853



This program is available on *ClipDisk*. A single issue is just \$9.95, a full year is only \$49.95. Phone orders are accepted at (716) 679-0126 - please have your credit card ready. You may also order by mail by enclosing your check or money order to *CoCo Clipboard Magazine*. Our address is 3742 U.S. 20, Box 3, Fredonia, NY 14063 U.S.A. Slightly higher prices for overseas orders.

van der Poel Continues on 26



CRC COMPUTERS

NOW ONE YEAR LIMITED WARRANTY ON ALL DISTO PRODUCTS



All DISTO products are designed by well known "TURN Of The Screw" author TONY DISTEFANO

Every one can NOW afford and enjoy a DISTO Controller

Mini Controller

The No-Extra-Cost Controller

- 2 DOS Switcher (switch included)
- NO clumsy jumpers to move
- Accepts 24 or 28 pin EPROMs

75\$ DOS included (add 10\$ for 2nd DOS)

See page 123, March 89 Rainbow for more info

RS-232 SuperPack 55\$

- A Stand-Alone (Multi-Pak reqd.) adapter that gives the user a true RS-232 Serial Port. • Completely compatible with OS-9's ACIA software.
- Compatible with software that requires the Tandy Deluxe RS-232 Pack.
- DB-25 cable included.

MEB Adapter 35\$

To plug into your DISTO Super Add-Ons (Multi-Pak required)

Super RAM 3 ZeroK Board 25\$

Free software included

RGB to Monochrome 35\$ Video/Audio Adapter

See page 123, March Rainbow 89

The only floppy disk Controllers that ELIMINATES the need of a Multi-Pak

Super Controller I

Along with the included DOS, plug-in three more software selectable DOSes or 2764 or 27128 EPROMs burned to your liking.

The internal M.E.B. (Mini Expansion Bus) lets you add DISTO's incredible Super Add-ons.

99.95 \$ / 110\$ (2 DOSes)

See page 122, March 89 Rainbow for more info

Super Controller II

NOW AVAILABLE AT YOUR LOCAL RADIO SHACK STORE Part no: 90-2009

- Under OS-9:
- Buffered Read/Write sector achieved without halting the CPU.
- Continual use of keyboard even while reading or writing to disk.
- System's clock no longer loses time during Read & Write.
- NMI is blocked & transferred to IRQ in software for low CPU overhead. • Completely Interrupt driven for fast & smooth Multi-Tasking operations.
- Drivers written by KEVIN DARLING 130\$

Don't let anyone tell you otherwise, the WD 1773 does not have any problems with COCO 3s. !! Only bad designs do !!

RADIO SHACK (R) which has more experience with COCO controllers than any other supplier now carry the DISTO SUPER CONTROLLER II



SUPER ADD-ONS

75\$ 3 in 1 Multi Board Adapter Parallel Printer Port, Real Time Clock and a true RS-232 Serial Port. External DC adapter required. (OS-9 Driver included)

35\$ Real Time Clock & Printer Interface OS-9 Driver (20\$)

55\$ Mini EPROM Programmer

40\$ Hard Disk Adapter Works with SASI & SCSI interface. No Multi-Pak needed if used with SC1 or SC2. Compatible with RGB DOS and Burke & Burke Hyper I/O. OS-9 Driver included.

70\$ Hard Disk Adapter with RS-232

NEW EXTENDED WARRANTY SERVICE: Any Disto Product serviced for flat rate of 20 \$US (includes S/H). Call us for your R.M.A. number.



CRC COMPUTERS INC.

11 Boul. Des Laurentides, Laval, (Quebec), Canada H7G 2S3
Call for Canadian Prices Include S&H of \$4 or \$8 if order exceeds \$75

Sorry: No personal cheques
Master Card and Visa Accepted

1-514-967-0195

```

014B NEXT T
0156 DATA "Ace", "Two", "Three", "Four", "Five", "Six", "Seven"
018A DATA "Eight", "Nine", "Ten", "Jack", "Queen", "King"
01B9
01BA (* Initialize our deck
01D0
01D1 FOR T=1 TO 52
01E1   Cards(T)=T
01ED NEXT T
01F8
01F9 CardsLeft=52
0200
0201 (* now deal the cards off one at a time
0228
0229 FOR T=1 TO 52
0239   N=RND(CardsLeft-1)+1
024B   C=Cards(N) \(* this is the card number
0270
0271   Cards(N)=Cards(CardsLeft) \(* move last card to
0294   CardsLeft=CardsLeft-1 \(* position of current card
02BA
02BB   Value=(C-1)/4+1 \(* convert number to named card
02EC   Suit=MOD(C-1,4)+1
02FE   PRINT CardValues(Value); " of "; CardSuits(Suit)
0316 NEXT T
0321
PROCEDURE mathsheet
0000
0001 (* Math Sheets: A simple program to produce mult/div worksheets
0040 (* for elementary school students.
0062
0063 DIM ColumnTwo:BOOLEAN
006A DIM Sign:STRING[3]
0076 DIM SheetType:STRING[1]
0082 DIM Path,StdIn:BYTE
008D DIM MaxQuestions,NQuestions,n1,n2:INTEGER
00A0 DIM Lower1,Lower2,Upper1,Upper2,Choices,T,TT:INTEGER
00BF DIM Quest(400,2):BYTE
00CF
00D0 StdIn=0
00D7
00D8 (* open a path to the printer for output...
0103 OPEN #Path,"/p":WRITE
0111
0112 (* set printer to "emphasised" mode... This is an Epson code, you
0153 (* may have to change it for your printer
017C PRINT #Path,CHR$(27); "e"; CHR$(27); "E";
0194 (* Talk to user.
01A5
01A6 PRINT CHR$(12);
01AC PRINT "Math Question Generator"
01C7 PRINT
01C9 PRINT "This program will generate a random series of"
01FA PRINT "multiplication or division questions on a worksheet."
0232 PRINT
0234
0235 (* Get the range of numbers to quiz on
025B
025C REPEAT
025E   PRINT
0260   PRINT "Enter the minimum value of number one (1 to 20):
;
0296 READ #StdIn,Lower1
02A0 UNTIL Lower1>0 AND Lower1<21
02B2
02B3 REPEAT

```

```

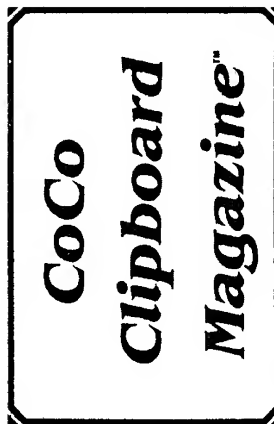
02B5 PRINT "Enter the maximum value of number one ("; Lower1; " to
20);
02F1 ;
02FB READ #StdIn,Uppr1
030E UNTIL Uppr1>=Lower1 AND Uppr1<21
030F REPEAT
0311 PRINT
0313 PRINT "Enter the minimum value of number two (1 to 20): "
0349 ;
0353 READ #StdIn,Lower2
0365 UNTIL Lower2>0 AND Lower2<21
0366 REPEAT
0368 PRINT "Enter the minimum value of number two ("; Lower2; " to
20);
03A4 ;
03AE READ #StdIn,Uppr2
03C1 UNTIL Uppr2>=Lower2 AND Uppr2<21
03C2 (* Fill the array with all the possible questions.
03F4 Choices=1
03F5 FOR T=Lower1 TO Uppr1
03FC FOR TT=Lower2 TO Uppr2
040E Quest(Choices,1)=T
0420 Quest(Choices,2)=TT
042E Choices=Choices+1
043C NEXT TT
0447 NEXT T
0452 (* Ask if Mult/Div or Both.
045D REPEAT
047A PRINT
047C PRINT "Sheet types available: 1> Division questions,"
047E PRINT " 2> Multiplication questions,"
04AF PRINT " 3> A mixture of both."
04E6 PRINT
0516 PRINT "Enter sheet type (1 to 3): ";
0518 GET #StdIn,SheetType
0538 UNTIL SheetType>"0" AND SheetType<"4"
0542 (* Not all the possible questions need to be printed.
0556 MaxQuestions=(Uppr1-Lower1+1)*(Uppr2-Lower2+1)
058C REPEAT
05A8 PRINT
05AA PRINT
05AC PRINT "How many questions do you wish (1 to "; MaxQuestions
05AE "); " ;
05E2 READ #StdIn,NQuestions
05EC UNTIL NQuestions>0 AND NQuestions<=MaxQuestions
05FF (* Print the sheet.
0600 PRINT #Path
0613 ColumnTwo=FALSE
0614 FOR Choices=MaxQuestions TO MaxQuestions+1-NQuestions STEP -1
061A T=INT(RND(Choices-1)+1) \(* this avoids t=0!
0620 (* see if we need to tab to column 2 or start a new line.
063F IF ColumnTwo=TRUE THEN
0665 PRINT #Path,TAB(45);
0666 ColumnTwo=FALSE
069F ELSE
06A0 PRINT #Path
06AB
06B6
06BC
06C0

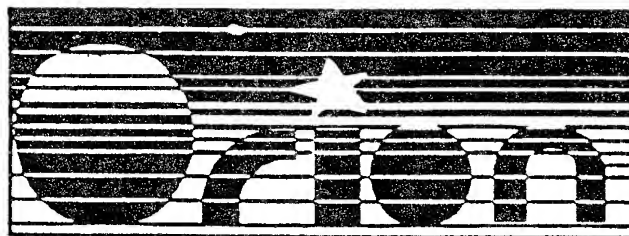
```

```

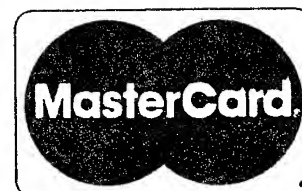
06C6 PRINT #Path
06CC PRINT #Path,TAB(5);
06D7 ColumnTwo=TRUE
06DD ENDIF
06DF (* Print the question. Note that a backspace is used to create
070E (* the divide sign. This may not work on all printers.
071E IF SheetType="2" OR SheetType="3" AND RND(0)>.5 THEN
0754 Sign="x"+CHR$(8)+" "
0775 IF SheetType="2" OR SheetType="3" AND RND(0)>.5 THEN
0776 Sign="x"+CHR$(8)+" "
0786 n1=Quest(T,1)
0793 n2=Quest(T,2)
07A0 ELSE
07A4 Sign=":"+CHR$(8)+"_"
07B4 n1=Quest(T,1)*Quest(T,2)
07CA n2=Quest(T,1)
07D7 ENDIF
07D9 PRINT #Path USING "i4,x1,s3,i4,s9",n1,Sign,n2,"="____;";
0808 (* Replace used question with last question in list
0809 Quest(T,1)=Quest(Choices,1)
083C Quest(T,2)=Quest(Choices,2)
083D NEXT Choices
0850 (* All done, reset the printer and end. Again, an Epson sequence.
086E PRINT #Path,CHR$(12); CHR$(27); "e";
088F CLOSE #Path
08CA

```





TECHNOLOGIES



40 track-double sided drives—\$34.95!

**New - full height - limited quantities available -
Avoid the rush and order yours NOW!**

We also have used / fully tested drives available for only \$24.95 each

Telepak II\$49.95

The Telepak II is fast becoming the new standard for Color Computer Telecommunications. Baud rates to 19,200 baud. Comes complete with 3' DB25 cable that will connect directly with any standard modem or terminal. Uses the latest in microchip technology. Does NOT require a multipak interface. Gold connectors.

2400 baud Modem\$139.95

300 /1200 /2400 baud operation. Auto-dial /Auto answer. Hayes AT command set. Complete with 2 year warranty and 6 foot cable. (4-pin or DB25- please specify)

V -Term.....\$39.95

Version 3.02.00. Communicate with VAX, UNIX, & Mainframe and BBS Systems!
Author -Tim Koonce . For RSDOS/COCO III

Supercomm..\$29.95

OS-9 Terminal package from SIG Computers. For the OS-9 Power user!

Alpha Software Technologies

Level II BBS Complete, ready to run!
Includes ANSI menus / editor! **\$29.95**

Warp One Level II windowing
terminal. Requires 512k
and RS232 Pak. **\$34.95**

Cables & such

4-pin - DB25 cable..\$12.95
(Specify Modem or Printer cable)

DB25 M-M.....\$9.95
6 ft. DB25 extension..\$9.95
Magnavox RGB.....\$14.95
Call for custom cables!!!

**Visa - Mastercard - C.O.D. &
Personal Checks Accepted**

**P.O. Box 63196
Wichita, KS 67203
316-946-0440**

Sports Card Filer



Haverstock & Wills

Is a huge baseball card collection driving you batty? Can you tackle questions about football cards in your collection? Sports Card Filer may be the answer to your needs. It is a full featured program that creates a random access file to store information about your cards. The program includes routines to enter cards into the file, edit card information, examine cards, list cards, and print some or all of the cards contained in the file. Card information in this program was formatted to conform with The Official Price Guides.

To start the program, run "CARDS". A main menu will appear listing the programs options. There is no need to enter a filename when adding or examining cards. Cards are automatically saved in a file created by the program called "CARDS.FIL." Your card file can be saved on the program disk, but we recommend that you use a separate formatted disk for your files. A disk that only contains files should be able to store about 1200 cards.

ENTERING CARDS

To enter cards, choose this option at the main menu. There are two screens of information for each card. The first contains space to enter the following: card number, player name, condition, manufacturer, and year issued. A help file gives more detailed information if needed. When you're finished entering the information on this screen, you may correct any information about the card or continue.

The second screen contains other information about the cards, such as quantity, price paid, market value, year purchased and notes. Card quantity must be entered. You can enter information into the remaining fields or skip them by pressing <ENTER>. Since market value for cards often changes on a monthly basis, you may only want to enter price paid. Whenever entering prices, be sure to do it in decimal form (ex. 2.50, .75, .05). When you're done with the second screen, you can correct information, enter the next card, or return to the menu. The last card entered is always displayed until you leave this section.

SELECT/REVIEW/EDIT

This section of the program enables you to look at the cards in the file. To view the entire file, press <ENTER>. Cards can also be selected by the following criteria: card number, manufacturer, condition, year issued, year purchased, or player name. For example, you could list all the mint condition cards in your file.

When the review screen appears, individual cards can be chosen by pressing the UP or DOWN arrow keys. The left and right arrow keys toggle between the two screens of information.

Moving through the list is accomplished by using the options appearing at the bottom of the screen. FIRST and LAST move to the beginning or end of the current list.

FORWARD and BACKWARD move up or down one screen (10 cards). UP and DOWN move the screen one line at a time. A DELETE option allows you to remove a card from the file. Pressing <ENTER> will close the file and return to the main menu.

PRINT

The print routine will print your entire list of cards or sort by the same criteria listed in the SELECT/REVIEW/EDIT section. For example, you could print all the 1986 cards in your collection.

The baud rate is currently set at 600 baud. If your printer is capable of higher baud rates, change line 5020 to:

```
POKE 150,1 (for 9600 baud)
POKE 150,18 (for 2400 baud)
POKE 150,40 (for 1200 baud)
```

The card list is printed in a table format with headings. You can use these printed lists for inventories or insurance purposes, trade lists, or sale lists for card shows. A running total of cards, value and price are printed at the end of the list.

HINTS & TIPS

Important! Be sure to return to the main

Continued On 30

Continued From 29

menu before exiting the program. This is necessary to close the files you've been working on. If you should accidentally turn off the computer or exit the program using the <BREAK> key, you'll need to delete a temporary file on your data disk named REVIEW.FIL. To do this, type KILL"REVIEW.FIL". This will restore the card file to its original state and prevent possible errors when the program is run again. If you collect sets, they can also be entered into the file. Substitute 000 for the player number, and type in the name of the set in place of the player name. Example: 000, Traded Set. Enter the rest of the information as you normally do for cards.

ClipDisk includes a sample file compiled by James Haverstock. You can use it to

practice using the program and its functions. Be sure to delete this file before starting your own card file.



This program is available on *ClipDisk*. A single issue is just \$9.95, a full year is only \$49.95. Phone orders are accepted at (716) 679-0126 - please have your credit card ready. You may also order by mail by enclosing your check or money order to *CoCo Clipboard Magazine*. Our address is 3742 U.S. 20, Box 3, Fredonia, NY 14063 U.S.A. Slightly higher prices for overseas orders.

```
10 REM **MAIN MENU MODULE**
20 GOTO 8000
30 CLS:PRINT@197,"REMOVE PROGRAM
DISK":PRINT@229,"& INSERT DATA
DISK":PRINT@261,"INTO DISK DRIVE
0.":PRINT@450,"PRESS ANY KEY TO
CONTINUE"
40 IF LEN(INKEY$)=0 THEN 40
50 CLEAR 10000:L$=STRING$(32,61)
:CL$=STRING$(32,143)
60 CLS:PRINT@0,"** SPORTCARDS FI
LER MAIN MENU **":PRINT@32,STRIN
G$(32,61)
70 PRINT@130,"WHAT DO YOU WANT T
O DO?":PRINT@196,"1) ENTER NEW C
ARDS":PRINT@228,"2) SELECT/REVIE
W/EDIT CARD":PRINT@260,"3) PRINT
LISTING OF CARDS":PRINT@292,"4)
END PROGRAM AND EXIT":PRINT@354
,"SELECT BY NUMBER (1-4)"
80 PRINT@416,"note: BE SURE TO R
ETURN TO THIS"
90 PRINT@448,"SCREEN BEFORE EXIT
ING PROGRAM!"
100 A$=INKEY$:IF A$="" THEN 100
110 ON VAL(A$) GOTO 130,140,140,15
0
120 GOTO 100
130 GOTO 1010
140 M=VAL(A$):POKE 481,M:GOTO 6010
150 CLS:PRINT"ARE YOU SURE (Y/N)
?"
160 A$=INKEY$:IF A$="" THEN 160
170 IF A$="N" OR A$="n" THEN 60
180 UNLOAD0:UNLOAD1:END
1000 REM **ENTER CARDS MODULE**
1010 GOSUB 2250:R=LOF(1):IF R=0
THEN CLOSE#1:GOTO 1070
1020 IF R>1200 THEN CLOSE#1:GOT
O 1040
1030 GET#1,R:C1$=CN$:P1$=PN$:CLO
SE#1:GOTO 1070
1040 CLS:PRINT@197,"FILE IS FULL
, PLEASE":PRINT@229,"INSERT A F
ORMATTED":PRINT@261,"DISK IN DR
IVE 0.":PRINT@450,"PRESS ANY KE
Y TO CONTINUE"
1050 A$=INKEY$:IF A$="" THEN 1050
1060 GOTO 1010
1070 R=R+1:CLS:PRINT"ENTER CARDS
":PRINT@18,"ENTRIES:":R:PRINT@3
2,L$;
```

```
1080 PRINT@64,"CARD NO.":PRINT
@96,"PLAYER NAME:":PRINT@128,"C
ONDTION:":PRINT@160,"ISSUER:":
PRINT@192,"YEAR ISSUED:19":PRIN
T@224,L$;
1090 GOSUB 2200
1100 PRINT@76,,:LINEINPUT C$:F=0:
GOSUB 1470
1110 PRINT@108,,:LINEINPUT P$:GOS
UB 1510
1120 PRINT@140,,:LINEINPUT G$:GOS
UB 1590
1130 PRINT@172,,:LINEINPUT I$:GOS
UB 1630
1140 PRINT@206,,:LINEINPUT Y$:F=1
:GOSUB 1670
1150 GOSUB 2250
1160 LSET CN$=C$:LSET PN$=P$:LSE
T CD$=G$:LSET IR$=I$:LSET YI$=Y$
1170 GOSUB 2280
1180 GOSUB 2240
1190 PRINT@292,"WHAT DO YOU WANT
TO DO?":PRINT@358,"1) CONTINUE
ENTERING DATA":PRINT@390,"2) C
ORRECT DATA":PRINT@452,"SELECT B
Y NUMBER (1-2)":
1200 A$=INKEY$:IF A$="" THEN 1200
1210 IF A$="1" GOTO 1240
1220 IF A$="2" GOTO 1370
1230 GOTO 1200
1240 FOR X=64 TO 448 STEP 32:PRINT@
X,CL$:NEXT X:PRINT@64,"QUANTITY:
":PRINT@96,"MARKET VALUE:":PRI
NT@128,"PURCHASE PRICE:":PRINT@
160,"YR. PURCHASED:19":PRINT@19
2,"NOTES:":PRINT@224,L$;:GOSUB 2
200
1250 PRINT@79,,:LINEINPUT Q$:F=2:
GOSUB 1710
1260 PRINT@111,,:LINEINPUT V$:F=3
:GOSUB 1750
1270 PRINT@143,,:LINEINPUT P$:F=4
:GOSUB 1780
1280 PRINT@176,,:LINEINPUT Y$:F=5
:GOSUB 1670
1290 PRINT@206,,:LINEINPUT N$:GOS
UB 1810
1300 GOSUB 2250
1310 LSET QY$=Q$:V=VAL(V$):LSET
MV$=MKN$(V):P=VAL(P$):LSET PP$=M
KN$(P):LSET YP$=Y$:LSET RK$=N$
1320 GOSUB 2280
1330 FOR X=288 TO 448 STEP 32:PRINT@
```

```
X,CL$:NEXT X:PRINT@260,"WHAT DO
YOU WANT TO DO?":PRINT@326,"1)
ENTER A NEW CARD":PRINT@358,"2)
CORRECT DATA":PRINT@390,"3) RE
TURN TO MAIN MENU":PRINT@452,"S
ELECT BY NUMBER (1-3)":
1340 A$=INKEY$:IF A$="" THEN 1340
1350 ON INSTR("123",A$) GOTO 1010,
1420,2310
1360 GOTO 1340
1370 E=1:GOSUB 2240:PRINT@257,"WH
AT DO YOU WANT TO EDIT?":PRINT@
322,"1) CARD NO. 2) PLAYER NA
ME":PRINT@354,"3) CONDITION 4
) ISSUER":PRINT@386,"5) YEAR IS
SUED 6) EXIT EDIT":PRINT@449,"S
ELECT BY NUMBER (1-6)":
1380 A$=INKEY$:IF A$="" THEN 1380
1390 ON INSTR("12345",A$) GOTO 110
0,1110,1120,1130,1140
1400 IF A$="6" THEN E=0:GOTO 1150
1410 GOTO 1380
1420 E=2:GOSUB 2240:PRINT@257,"WH
AT DO YOU WANT TO EDIT?":PRINT@
322,"1) QUANTITY 2) VALUE":PR
INT@354,"3) PRICE 4) YEAR":
:PRINT@386,"5) NOTES 6) EXI
T EDIT":PRINT@449,"SELECT BY NU
MBER (1-6)":
1430 A$=INKEY$:IF A$="" THEN 1430
1440 ON INSTR("12345",A$) GOTO 12
50,1260,1270,1280,1290
1450 IF A$="6" THEN E=0:GOTO 1330
1460 GOTO 1430
1470 IF C$="H" OR C$="h" GOSUB 2080
:GOTO 1100
1480 IF LEN(C$)=0 GOSUB 2050:GOTO 1
100
1490 IF LEN(C$)>3 GOSUB 2030:GOTO 1
100
1500 F$=C$:GOTO 1840
1510 IF P$="H" OR P$="h" GOSUB 2090
:GOTO 1110
1520 IF LEN(P$)=0 GOSUB 2050:GOTO
1110
1530 IF LEN(P$)<=17 GOTO 1580
1540 L=LEN(P$):N=INSTR(P$,CHR$(3
2))
1550 P2$=RIGHT$(P$,L-N+1):P1$=LE
FT$(P$,1)+CHR$(46)
```

Continued On 31

Continued From 30

```

***"OR C=1 THEN SOUND120,3:RETUR
N
3630 SOUND130,2:PRINT@480,"DELET
E THIS CARD (Y/N)?";
3640 AN$=INKEY$
3650 IF AN$="Y"GOTO3680
3660 IF AN$="N"GOTO3710
3670 GOTO3640
3680 R$="*** DELETED *** ":Z=Z+1
3690 LSETPN$=R$:PUT#1,X
3700 PRINT@L+5,R$;
3710 T=VAL(REC$)
3720 OPEN"D",#2,"CARDS/FIL",50
3730 FIELD#2,50 AS INFO$
3740 LSETINFO$=R$:PUT#2,T
3750 CLOSE#2
3760 PRINT@480," 1st-Last-fwd-bw
D-up-dn-de1-end";:SOUND120,3:RET
URN
3770 IFC=0THENSOUND120,3:RETURN
3780 O1=L:O2=2:S1=0
3790 GOSUB4360
3800 Q$=O7$:GOSUB4170:LSETQY$=Q$
:PUT#1,X
3810 T=VAL(REC$):GOSUB3890:LSETY
$=Q$:PUT#2,T:CLOSE#2
3820 RETURN
3830 IF C=0THENSOUND120,3:RETURN
3840 O1=L+3:O2=6:S1=3
3850 GOSUB4360
3860 V=VAL(O7$):GOSUB4170:LSETMV
$=MKN$(V):PUT#1,X
3870 T=VAL(REC$):GOSUB3890:LSETV
$=MKN$(V):PUT#2,T:CLOSE#2
3880 RETURN
3890 OPEN"D",#2,"CARDS/FIL",50
3900 FIELD#2,26 AS INFO$,2 AS Y$
,5 AS V$,5 AS P$,2 AS YP$,10 AS
K$
3910 RETURN
3920 IF C=0THENSOUND120,3:RETURN
3930 O1=L+21:O2=10:S1=21
3940 GOSUB4360
3950 N$=O7$:GOSUB4170:LSETRK$=N$
:PUT#1,X
3960 T=VAL(REC$):GOSUB3890:LSETK
$=N$:PUT#2,T:CLOSE#2
3970 RETURN
3980 IF C=1 THEN SOUND120,3:RETU
RN
3990 GOSUB4170
4000 IF LEFT$(PN$,3)="***"THEN S
OUND120,3:RETURN
4010 PRINT@64,"QTY VALUE PRICE
YR NOTES ";:PRINT@480,"EDI
T: QTY.-VALUE-NOTES ";
4020 PRINT@128+D1*32,STRING$(32,
143);
4030 PRINT@128+D1*32,QY$;:PRINT@
130+D1*32,USING"####.##";CVN(MV$
);:PRINT@138+D1*32,USING"####.##
";CVN(PP$);
4040 PRINT@146+D1*32,YP$;:PRINT@
150+D1*32,RK$;
4050 C=1:SOUND130,1:RETURN
4060 IF C=0THEN SOUND120,3:RETUR
N
4070 GOSUB4170
4080 PRINT@64," NO. PLAYER NA
ME COND YR I";:PRINT@480," 1st
-Last-fwd-bwd-up-dn-de1-end";
4090 PRINT@128+D1*32,STRING$(32,
143);
4100 PRINT@129+D1*32,CN$;
4110 PRINT@133+D1*32,PN$;

```

```

4120 PRINT@150+D1*32,CD$;
4130 PRINT@155+D1*32,YR$;
4140 PRINT@158+D1*32,IR$;
4150 PRINT@L,">";
4160 C=0:SOUND130,1:RETURN
4170 X=((L-128)/32)+1)+(R-D)
4180 GET#1,X
4190 RETURN
4200 IF C=1 THEN SOUND 120,3:RET
URN
4210 CLOSE:KILL"REVIEW/FIL":IF Z
=0GOTO4340
4220 CLS:PRINT@229,"ONE MOMENT P
LEASE!!!";
4230 J=0:T=0
4240 GOSUB7040
4250 OPEN"D",#2,"UPDATE/FIL",50
4260 FIELD#2,50 AS UINFO$
4270 FOR T=1TO LOF(1)
4280 GET#1,T
4290 IF LEFT$(INFO$,3)="***"THEN
4310
4300 LSETUINFO$=INFO$:J=J+1:PUT#
2,J
4310 NEXT
4320 CLOSE
4330 KILL"CARDS/FIL":RENAME"UPDA
TE/FIL"TO"CARDS/FIL"
4340 GOTO50
4350 REM lineinpt
4360 O7$=STRING$(O2,32):O3=1
4370 PRINT@O1,O7$;
4380 PRINT@O3+O1-1,CHR$(62);:O1$
=INKEY$:IFO1$="THEN4380ELSEIFO1
$>CHR$(31)ANDO3<=O2 THENMID$(O7$
,O3)=O1$:PRINT@O3+O1-1,O1$;:O3=O
3+1:GOTO4380
4390 IFO1$=CHR$(13)THEN:O7$=LEFT
$(O7$,O3-1):S=LEN(O7$):PRINT@L+(
S+S1),CHR$(143);:RETURNELSEIFO1$
=CHR$(21)THEN PRINT@L+(S+S1),CHR
$(143);:GOTO4360ELSEIFO1$=CHR$(8
)ANDO3>1ANDO3<=O2 THENMID$(O7$,O
3)=" ":O3=O3-1ELSEIFO1$=CHR$(8)A
NDO3>1 THENO3=O3-1
4400 GOTO4370
5000 REM ** PRINT MODULE **
5010 CLS:PRINT@233,"PRINTING"
5020 POKE 150,87
5030 PL$=STRING$(80,61)
5040 GOSUB 7010:R=0
5050 PRINT#-2,TAB(24),"SPORTCARD
S FILER":PRINT#-2,PL$
5060 PRINT#-2,"CARD# PLAYER NA
ME COND YEAR ISSUER QUAN
VALUE PRICE YR REMARKS":PR
INT#-2,PL$
5070 R=R+1:GET#1,R
5080 PRINT#-2,USING" % %";CN$;
:PRINT#-2,USING" % %";PN$;:PRINT#-2,USING" % %";CD
$;:PRINT#-2,USING"19% %";YR$;:GO
SUB 5160:PRINT#-2,USING" %
%";I$;:PRINT#-2,USING" % %";QY
$;:PRINT#-2,USING" ####.##";CVN(M
V$);
5090 PRINT#-2,USING" ####.##";CV
N(PP$);:PRINT#-2,USING" % %";YP
$;:PRINT#-2,USING" % %";
RK$
5100 Q=VAL(QY$):V=CVN(MV$):P=CVN
(PP$):Q1=Q1+Q:V1=V1+(V*Q):P1=P1+
(P*Q)
5110 IF LOF(1)=R THEN5130
5120 GOTO5070
5130 PRINT#-2,TAB(105),"TOTALS =
=>";:PRINT#-2,USING"####";Q1;:P

```

```

RINT#-2,USING" ####.##";V1;:PRIN
T#-2,USING" ####.##";P1
5140 CLOSE#1:KILL"REVIEW.FIL":GO
TO50
5150 END
5160 N=INSTR("BDFLOTSP",IR$)
5170 FOR X=1TO N:READI$:NEXT:RES
TORE:RETURN
5180 DATA BOWMAN,DONRUSS,FLEER,L
EAF,O-PEE-CHEE,TOPPS,SCORE,SPORT
FLICS
6000 REM **SELECT MODULE**
6010 CLS:PRINT@132," REVIEW CARD
S BY: ";:PRINT@196," 1) CARD NUM
BER ";:PRINT@228," 2) PLAYER
NAME ";:PRINT@260," 3) ISSUE
R ";:PRINT@292," 4) CONDITI
ON ";:PRINT@324," 5) YEAR
ISSUED"
6020 PRINT@356," 6) YEAR PURCHAS
ED"
6030 PRINT@451,"SELECT BY NUMBER
OR PRESS <ENTER> FOR ALL
CARDS.";
6040 A$=INKEY$:IFA$="THEN6040
6050 ON INSTR("123456",A$)GOTO 6
080,6140,6180,6220,6260,6290
6060 IF A$=CHR$(13) GOTO 6320
6070 GOTO 6040
6080 CLS:PRINT@132,"REVIEW BY CA
RD NUMBER"
6090 PRINT@224,"BEGINNING CARD N
UMBER: ";:LINEINPUTC1$:GOTO6110
6100 PRINT@288," ENDING CARD N
UMBER: ";:LINEINPUTC2$:GOTO6120
6110 IF VAL(C1$)<=0 THEN 6090 EL
SE 6100
6120 IF VAL(C2$)<=VAL(C1$) THEN
6090
6130 GOSUB 6440:GOTO6340
6140 CLS:PRINT@132,"REVIEW BY PL
AYER"
6150 PRINT@224,"ENTER PLAYER: ";
:LINEINPUTC1$
6160 IF LEN(C1$)<16 THEN C1$=C1$
+" ":GOTO6160
6170 GOSUB 6440:GOTO6340
6180 CLS:PRINT@132,"REVIEW BY IS
SUER"
6190 PRINT@224,"ISSUER NAME: ";:
LINEINPUT C1$
6200 C1$=LEFT$(C1$,1)
6210 GOSUB6440:GOTO6340
6220 CLS:PRINT@132,"REVIEW BY CO
NDITION"
6230 PRINT@224,"ENTER CONDITION:
";:LINEINPUT C1$
6240 IF LEN(C1$)<4 THEN C1$=C1$+
" ":GOTO6240
6250 GOSUB6440:GOTO6340
6260 CLS:PRINT@132,"REVIEW BY YE
AR ISSUED"
6270 PRINT@224,"ENTER YEAR ISSUE
D: 19";:LINEINPUT C1$
6280 GOSUB6440:GOTO6340
6290 CLS:PRINT@132,"REVIEW BY YE
AR PURCHASED"
6300 PRINT@224,"ENTER YEAR PURCH
ASED: 19";:LINEINPUT C1$
6310 GOSUB 6440:GOTO6340
6320 CLS:PRINT@230,"REVIEW ALL C
ARDS"
6330 GOSUB6440:GOTO6580
6340 J=0
6350 FORT=1 TO LOF(1)

```

Continued On 33

ATTENTION SCULPTOR USERS

DO YOU NEED MORE?

Here's A Special Offer. Get A FREE CSG IMS Demo!

Flexibility

The CSG IMS Information Management System incorporates a full-featured procedural programming language. This incredibly robust compiled language gives you application flexibility that is unprecedented in the OS9 software arena.

Easy Forms

Need a complex screen form layout? It's easy! Just 'paint' it on the screen and CSG IMS will do the rest. Printed reports are just as quick and easy. Of course, you can further customize screen forms and reports with CSG IMS's programming language.

Powerful Databases

CSG IMS's remarkable database structure provides excellent performance, multi-user file access, and a ruggedness that makes it almost impossible for you to lose your data. And its huge record and file size capabilities can handle even the most complex applications with ease.

And More

But there's much more to CSG IMS than we can describe in this space.

Free Demo

So to let you find out for yourself, we are offering a free demo copy of CSG IMS. Just send us a proof of purchase for Sculptor, or any other OS9 database product, and we'll send you a demo disk and full manual AT NO CHARGE! Please be sure to specify your system type, disk size, and OS9 version with your order.

Clearbrook Software Group Inc.

USA: P.O. Box 8000-499, Sumas, WA 98295-8000

CANADA: P.O. Box 8000-499, Abbotsford, B.C. V2S 6H1

TELEPHONE: (604) 853-9118

FREE ORDER

All product names mentioned are trademarks of their respective holders.

Continued From 31

```

1560 N$=P1$+P2$
1570 PRINT@108,N$:P$=N$:GOTO1530
1580 IF E=1GOTO1370ELSE2200
1590 IF G$="H"OR G$="h" GOSUB210
0:GOTO1120
1600 IF LEN(G$)=0 GOSUB2050:GOTO
1120
1610 IF G$="MT"ORG$="NRMT"ORG$="
EX"ORG$="VG"ORG$="G"ORG$="F"GOTO
1620ELSEGOSUB2050:GOTO1120
1620 IF E=1GOTO1370ELSE2200
1630 IF I$="H"OR I$="h"QOSUB2110
:GOTO1130
1640 IF LEN(I$)=0 GOSUB2050:GOTO
1130
1650 IF I$="B"ORI$="D"ORI$="F"OR
I$="L"ORI$="O"ORI$="T"ORI$="S"OR
I$="P"GOTO1660ELSEGOSUB2050:GOTO
1130
1660 IF E=1GOTO1370 ELSE2200
1670 IF Y$="H" OR Y$="h"GOSUB 21
20:IF F=5GOTO1280ELSE1140
1680 IF LEN(Y$)=1OR LEN(Y$)>2GOS
UB2020:IF F=5GOTO1280ELSE1140
1690 IF LEN(Y$)=0 AND F=1GOSUB20
50:GOTO1140 ELSE IF LEN(Y$)=0 AN
D F=5 THEN Y$="**":PRINT@176,Y$:
GOTO1830
1700 F$=Y$:GOTO1840
1710 IF Q$="H"OR Q$="h"GOSUB2130
:GOTO1250
1720 IF LEN(Q$)=0GOSUB2050:GOTO1
250
1730 IF LEN(Q$)>2GOSUB2010:GOTO1
250
1740 F$=Q$:GOTO1840
1750 IF V$="H"OR V$="h"GOSUB2140
:GOTO1260
1760 IF LEN(V$)=0 THEN V$="0.00"
:PRINT@111,V$
1770 F$=V$:GOTO1930
1780 IF P$="H"OR P$="h"GOSUB2150
:GOTO1270
1790 IF LEN(P$)=0THEN P$="0.00":
PRINT@143,P$
1800 F$=P$:GOTO1930
1810 IF N$="H"ORN$="h"GOSUB2170:
GOTO1290
1820 IF LEN(N$)>10GOSUB2070:GOTO
1290
1830 IF E=2GOTO1420ELSE2200
1840 L=LEN(F$)
1850 FORX=1TOL
1860 IF ASC(MID$(F$,X,L))<48 OR
ASC(MID$(F$,X,L))>57 THEN X=L:GO
TO1880
1870 NEXT:IF E=1GOTO1370ELSEIF E
=2GOTO1420ELSE2200
1880 GOSUB2040
1890 IF F=0 GOTO1100
1900 IF F=1 GOTO1140
1910 IF F=2 GOTO1250
1920 IF F=5 GOTO1280
1930 L=LEN(F$)
1940 FORX=1TOL
1950 IF ASC(MID$(F$,X,L))>58AND
ASC(MID$(F$,X,L))<=90 OR ASC(RI
GHT$(F$,3))<>46 THENX=L:GOTO1970
1960 NEXT:GOTO2000
1970 GOSUB2060
1980 IF F=3 GOTO1260
1990 IF F=4 GOTO1270
2000 IF E=2THEN1420ELSE2200
2010 GOSUB2190:PRINT@356,"ENTER
ONLY TWO DIGITS ":GOTO2220

```

```

2020 GOSUB2190:PRINT@359,"ENTER
AS TWO DIGITS":GOTO2220
2030 GOSUB2190:PRINT@356,"ENTER
ONLY THREE DIGITS.":GOTO2220
2040 GOSUB 2190:PRINT@356,"PLEAS
E ENTER ONLY NUMBERS.":GOTO2220
2050 GOSUB2190:PRINT@356,"PLEASE
ENTER AS REQUESTED":GOTO2220
2060 GOSUB2190:PRINT@356,"ENTE
R AS DOLLAR AMOUNT":GOTO2220
2070 GOSUB2190:PRINT@356,"ENTER
ONLY 10 CHARACTERS":GOTO2220
2080 GOSUB2180:PRINT@356,"THIS I
S THE CARD NUMBER":RETURN
2090 GOSUB2180:PRINT@356,"NAME O
F PLAYER ON CARD":RETURN
2100 GOSUB2180:PRINT@353,"MINT
-MT VERY GOOD-VG":PRINT@
385,"NEAR MINT-NRMT GOOD
-G":PRINT@417,"EXCELLENT-EX
FAIR -F":RETURN
2110 GOSUB2100:PRINT@353,"B=BOWM
AN D=DONRUSS F=FLEER":PRINT@
385,"L=LEAF O=O-PEE-CHEE T=TO
PFS":PRINT@417,"S=SCORE P=SPOR
TFLICS":RETURN
2120 GOSUB2180:PRINT@357,"YEAR P
RINTED ON CARD":RETURN
2130 GOSUB2180:PRINT@357,"NUMBER
OF CARDS ON HAND":RETURN
2140 GOSUB2180:PRINT@357,"CURREN
T VALUE OF CARD":RETURN
2150 GOSUB2180:PRINT@357,"COST O
F CARD":RETURN
2160 GOSUB2180:PRINT@357,"YEAR C
ARD WAS PURCHASED":RETURN
2170 GOSUB 2180:PRINT@356," EN
TER ANY COMMENTS":RETURN
2180 FORX=256 TO 479STEP32:PRINT
@X,CL$;:NEXT:PRINT@296,"** HELP
FILE **":PRINT@448,L$;:RETURN
2190 FORX=256TO384STEP32:PRINT@X
,CL$;:NEXT:SOUND120,3:PRINT@296,
"** ENTRY ERROR **":RETURN
2200 E=0:PRINT@296,"** LAST ENTR
Y **":PRINT@356,"CARD NO. PLAY
ER NAME"
2210 PRINT@390,C1$:PRINT@399,P1$
2220 PRINT@416,L$
2230 PRINT@456,"PRESS H FOR HELP
":RETURN
2240 FOR X=256TO448STEP32:PRINT@
X,CL$;:NEXTX:RETURN
2250 OPEN"D",#1,"CARDS/FIL",50
2260 FIELD#1,3 AS CN$,16 AS PN$,
4 AS CD$,1 AS IR$,2 AS YI$,2 AS
QY$,5 AS MV$,5 AS PP$,2 AS YP$,1
0 AS RK$
2270 RETURN
2280 PUT #1,R
2290 CLOSE#1
2300 RETURN
2310 CLOSE
2320 GOTO50
3000 REM **REVIEW/EDIT CARDS MOD
ULE**
3010 GOSUB 7010
3020 R=0:D=0:L=128:Z=0:C=0:D1=0
3030 CLS:PRINT@9,"REVIEW CARDS";
:PRINT@32,L$;
3040 PRINT@65,"NO. PLAYER NAME
COND YR I";
3050 PRINT@96,L$:PRINT@448,L$;
3060 PRINT@480," 1st-Last-fwd-bw
D-uP-dN-de1-eND";
3070 GOSUB3150
3080 A$=INKEY$:IF A$=""THEN3080

```

```

3090 IF A$=CHR$(10)THEN POKE342,
255:GOSUB3320
3100 IF A$=CHR$(94)THEN POKE341,
255:GOSUB3360
3110 IF A$=CHR$(8) GOSUB3980
3120 IF A$=CHR$(9) GOSUB4060
3130 ON INSTR("SAFBUDLQVNE",A$)G
OSUB3470,3500,3400,3430,3590,356
0,3620,3770,3830,3920,4200
3140 GOTO3080
3150 GOSUB 3250
3160 R=R+1
3170 IF LOF(1)=0 THEN 3610
3180 GET#1,R
3190 PRINT@129+D*32,CN$;
3200 PRINT@133+D*32,PN$;
3210 PRINT@150+D*32,CD$;
3220 PRINT@155+D*32,YR$;
3230 PRINT@158+D*32,IR$;
3240 D=D+1:GOTO3290
3250 FORBG=128TO416STEP32
3260 PRINT@BG,CL$;
3270 NEXT
3280 RETURN
3290 IF R=LOF(1)THEN3310
3300 IF D<10THEN3160
3310 PRINT@L,">":RETURN
3320 IF L+32>416OR L+32>128+D*3
2ORC=1THEN SOUND120,3:RETURN
3330 L=L+32:D1=D+1
3340 PRINT@L,">":PRINT@L-32,CHR
$(143);
3350 SOUND 130,1:RETURN
3360 IF L-32<128ORC=1THEN SOUND1
20,3:RETURN
3370 L=L-32:D1=D1-1
3380 PRINT@L,">":PRINT@L+32,CHR
$(143);
3390 SOUND130,1:RETURN
3400 IF R=LOF(1)ORC=1THEN SOUND1
20,3:RETURN
3410 D=0:L=128:D1=0:GOSUB3150
3420 SOUND130,1:RETURN
3430 IF R<=100ORC=1THEN SOUND 120
,3:RETURN
3440 R=(R-D)-10:IFSGN(R)=-1THENR
=0
3450 D=0:L=128:D1=0:GOSUB3150
3460 SOUND130,1:RETURN
3470 IFR<=100ORC=1THENSOUND120,3:
RETURN
3480 R=0:D=0:D1=0:C=0:L=128:GOSU
B3150
3490 SOUND130,1:RETURN
3500 IFR=LOF(1)ORC=1THENSOUND120
,3:RETURN
3510 Y=LOF(1)*.1:W=FIX(Y):F=ABS(
Y)-ABS(W)
3520 IFF=0THENR=LOF(1)-10:GOTO35
40
3530 R=INT(Y)*10
3540 D1=0:D=0:L=128:C=0:GOSUB315
0
3550 SOUND130,1:RETURN
3560 IFR<=100ORC=1THENSOUND120,3:
RETURN
3570 R=(R-1)-10:D1=0:D=0:L=128:G
OSUB3150
3580 SOUND130,1:RETURN
3590 IFR=LOF(1)ORC=1THENSOUND120
,3:RETURN
3600 R=(R+1)-10:D1=0:D=0:L=128:G
OSUB3150
3610 SOUND130,1:RETURN
3620 GOSUB4170:IF LEFT$(PN$,3)="

```

Continued On 34

Continued From 33

```

6360 GET#1,T
6370 ON INSTR("123456",A$)GOTO63
80,6390,6400,6410,6420,6430
6380 IF VAL(LEFT$(INFO$,3))<VAL(
C1$) OR VAL(LEFT$(INFO$,3))>VAL(
C2$) THEN 6490 ELSE 6480
6390 IF MID$(INFO$,4,16)<>C1$ TH
EN 6490ELSE6480
6400 IF MID$(INFO$,24,1)<>C1$THE
N6490ELSE6480
6410 IF MID$(INFO$,20,4)<>C1$THE
N6490ELSE6480
6420 IF VAL(MID$(INFO$,25,2))<>V
AL(C1$)THEN6490ELSE6480
6430 IF VAL(MID$(INFO$,39,2))<>V
AL(C1$)THEN6490ELSE6480
6440 PRINT#425,"SEARCHING":GOSUB
7040
6450 OPEN"D",#2,"REVIEW.FIL",54
6460 FIELD #2,50 AS RINFO$,4 AS
REC$
6470 RETURN
6480 LSETRINFO$=INFO$:LSETREC$=S
TR$(T):J=J+1:PUT#2,J
6490 NEXT
6500 IF LOF(2)=0 THEN CLOSE:GOTO
6540
6510 CLOSE
6520 IF PEEK(481)=2GOTO3010ELSE5
010
6530 END
6540 PRINT#420,"NO CARDS FOUND"
6550 PRINT#452,"PRESS ANY KEY TO
CONTINUE"
    
```

```

6560 A$=INKEY$:IF A$=""THEN6560
6570 GOTO6010
6580 FORR=1TOLOF(1):GET#1,R:LSET
RINFO$=INFO$:LSETREC$=STR$(R):J=
J+1:PUT#2,J:NEXT
6590 GOTO6500
7000 REM ***FILE SUBROUTINES***
7010 OPEN"D",#1,"REVIEW.FIL",54
7020 FIELD#1,3 AS CN$,16 AS PN$,
4 AS CD$,1 AS IR$,2 AS YR$,2 AS
QY$,5 AS MV$,5 AS PP$,2 AS YP$,1
0 AS RK$,4 AS REC$
7030 RETURN
7040 OPEN"D",#1,"CARDS.FIL",50
7050 FIELD#1,50 AS INFO$
7060 RETURN
8000 PCLEAR1
8010 GOTO30
    
```

CoCo Clipboard Magazine

Finally

An answer for America's dying teens!
For your free copy of this dynamic and
powerful book, call us today at
1-800-VICTORY.



Also;

See and hear young people who have
already found the answer at
Freedom Village, USA in Lakemont, N.Y.

Check your local Christian
radio and television stations for the
Victory Today program.

For more information write
Freedom Village, USA Lakemont, NY 14857

BOWLING LEAGUE SECRETARY ©1986



Reviewed	
Sept.	April
1986	1987
pg 141	pg 140

Now for the Co-Co 1, 2 or 3 with disc drive,
printer, 32K.

- User friendly—full menu driven selections.
- Any number of teams, and over 200 bowlers.
- Calculates and stores all team and bowlers stats.
- Men, women, mixed, scratch or handicap; blinds and substitutes.
- Start up any time in season.
- Full edit capability.
- Automatic backups and weekly, mid-season and end-season resets.
- ABC/WIBC style printouts.
- Includes 20-page instruction manual.
- Upgrade for individual tally sheets. (\$9.95 separate; free when ordered with program.)

Priced at **\$49.95** including Shipping, Handling & Sales Tax. To order, send check or M.O.

Specify Version number (1.0 for men or women; 1.1 for mixed) and number of disc drives.

TOMELA*CO.

P.O. Box 2162 • Doylestown, Pa. 18901-2162 • (215) 348-5822

C.C.B.M.S. V



Jim DeStefano

(Note: This article refers to a series of Business Management programs published in CoCo Clipboard Magazine beginning with the Jan '89 issue. The program in this article will not run without having first setup files using previously published programs; "CSFLMT", the Customer File and "SLORNT", the Sales Order File.

The previous articles also addressed the objective of the series, to write 'spines' that can be modified for use in specific businesses, to show the power available from BASIC and detailed the most cost effective CoCo (-3 only) business system configuration.

It is not the policy of CCM to "bait" new subscribers into purchasing back issues, however it would be impossible to print this series of programs in one issue. Back issues of the magazine are available by calling 716/697-0126; see the Back Issue order page.

Since we can not be responsible for the way the programs are used, CoCo Clipboard and/or the program contributors can not be responsible for the results of using the programs.)

The last article opened with, 'a CPA is going to design the accounting logic' and it closed with, 'if the accounts receivable module writes fast...'; neither happened.

As to the accounting logic design, not to worry, another CPA said my planned approach would be just fine, and considering a computer was doing the calculation, might even be better. (For those in the know, the plan duplicates what is called the Quick Cash calculation.)

In addition, Butch Mooney of Santa Clarita, CA has detailed his accounting needs based on his experience with his horse boarding/training business. It's not an easy road, but its coming together.

Along the way we asked if anyone had a cure for Roxann Brown's trouble of losing data during SAVES. She got RGB-DOS and the problem disappeared.

This article begins the Accounts Receivable module, "ACCREC". The program design has some new wrinkles that will be of interest to all. The one thing that gives me a kick is the use of horizontal screen scrolling. The ability is designed right in the GIMMIE chip. That is, we can display

more than 80 character across, but only 80 characters at a time.

If the 81st character is displayed, the 1st character is scrolled off the display, but the 2nd through the 81st is displayed. Not as good as the 132 character rows of the commercial systems, but not bad for a \$200 computer.

The program also contains LOCATE statements with the first number greater then 80; strange to see. Of course whatever prints after such a command will be what is seen when the scrolling is done.

The CoCo cares for the scrolling somewhat automatically. A part of RAM is reserved all the time to 'hold' that which is being displayed. The CPU jumps down to that area several times a second, gets whatever data is there and sends it to be displayed. As long as we display only 80 column rows, much of the reserved space is not used. There is enough space to 'hold' something like 25 rows of 132 characters each. (Many of the ML utility programmers put their code in the 'normally' unused space in this area. Of course such a utility won't work with a program that uses the space as it was intended; "RGB-DOS" works fine, "Basic Screen Editor" does not.)

I have been told the early CoCo-3s have a bug in their GIMMIE chip which does not allow the horizontal scrolling to work. Let me know if you have trouble. The same act can be programmed, but the scrolling will not be as fast. When things are working right it takes only one poke to make the scroll occur; v-e-r-y fast.

A couple things to note when the program is set to scroll. First, "breaking" out of the program will scramble the screen. To recover from this just type WIDTH80 and all will be righted. Second, if an Error Message caused the break its notation will be lost. In the following program, just type GOSUB 4050 and follow the screen message. The error message will be recovered and easily read.

Have you ever read that even though the CoCo allows 15 files to be open at once, don't have more than two open at any one time because the data gets mixed? Nonsense! This program uses five files. I tried to keep only two open at a time. When I got done I had about a 1/2 K of code devoted to just opening and closing. Just to see what

CCBMS continued on 36

would happen, I coded in the ability to have the five files open at the same time and ripped out the 1/2 K. No trouble and the whole thing works faster.

Things are getting complex enough to detail the action. "CSFLMT" creates the "CUS FILE.DAT" file, which holds all the data on each customer; address, phone, etc.

When the programs shows the "Loading Data" message, the program is getting all the customer names and associated record number, and putting them in sequential String\$ variables. This is called an index. It uses a couple K of memory. However, when a search is done by customer name, the in-memory (fast) String\$ are looked at. When the desired name is found, the record number is 'known' and the program goes directly to the proper customer record to get the rest of the data.

Roxann has so many customers, more than 150, the program ran out of space for the index. She just ripped out the Hints and Revision sections, increased the DIM quantities in line 9030 and continued on.

"SLORNT" creates "SAL HEAD.DAT" and "SAL BODY.DAT". These files hold the data for each Sales Order. "SAL HEAD" has a pointer

to the buyer, customer; the Sales Order number, dates, total dollars, etc. "SAL BODY" holds the details of the item(s) ordered; quantity, description, value each, etc.

After a Sales Order has been entered, the choice is given to either print a Receipt, allow an Invoice to be recorded and printed later or Neither.

The neat trick about the Sales Order module is its ability to allow an order to be changed or added to if it is an 'invoice' order. The file allows this by using pointers from one record to the next. Keep in mind, an order can have any number of lines; each line is a record in the file. After a given order is entered, one or more other orders could be entered right after it.

Then if the original order has a line added to it, the program could shuffle the file to get the added line inserted in the proper order. However, that would be slow. Rather, the end of each line holds the record number of the next line of the given order. Of course this design allows the lines of a given sales order to be scattered through out the file, but each 'knows' to which sales order it belongs.

VIP Software for the CoCo 3

VIP Writer III includes VIP Speller.....	\$79.95
VIP Calc III.....	\$69.95
VIP Database III.....	\$69.95
VIP Library /WDCE.....	\$179.95
Upgrade Writer to Writer III.....	\$49.95
Upgrade Calc to Calc III.....	\$29.95
Upgrade Database to Database III....	\$39.95
Upgrade Library to Library /WDCE....	\$99.95

VIP Software for ALL CoCos

VIP Writer includes VIP Speller*.....	\$69.95
VIP Calc.....	\$59.95
VIP Database.....	\$49.95
VIP Speller.....	\$34.95
VIP Disk-Zap.....	\$29.95
VIP Integrated Library.....	\$149.95
Upgrade any VIP pgm to VIP Library	\$99.95

Upgrading? Send disk only + amount + \$3 S/H
See our July ads for more information

VISA 1-800-322-9873 M/C
SD Enterprises info line (805) 566-1317
P. O. Box 621 Carpinteria Ca 93013

VIP Library orders add \$4 S/H USA, \$5 Canada & \$10 Foreign
Other orders add \$3 S/H in USA, \$4 Canada, \$6 Foreign. COD orders add an additional \$2.75. Checks allow 3 weeks for delivery. Calif. res. add 6% tax.

THE RGB HARD DISK

A warranty can replace your Hard Disk Drive, but not the **valuable data it contains!** Think about this **BEFORE** you buy a used or rebuilt hard drive.

RGB Computer Systems uses only **BRAND NEW** Hard Disk Drives. Controllers and Components, all with the **Full Manufacturers Warranty.**

Due to the unique design of our components and software, RGB also has the **fastest** and **most reliable** data transfer in the industry!

The RGB Hard Disk System fully supports both BASIC and OS-9, and provides the ability to boot up OS-9 completely from the Hard Disk without the need for special EPROMS or the loss of Disk Basic.

If you need a Fast, **Reliable** Hard Disk System and don't mind spending a few dollars more for **Quality**, please give us a call today!

RGB COMPUTER SYSTEMS



294 STILLWELL AVE
KENMORE, NY 14217

(716) 876-7538

CCBMS continued from 36

The ability to change a sales order is allowed until it's first invoice is written.

The program in this article, "ACCREC", Accounts Receivable, allows the creation of invoices. It uses the three files noted above and creates two more; "IVC NUMB.DAT" and "IVC REC.DAT". The record number of 'NUMB' is the invoice number. It holds the sales order number that belongs to the invoice number, the pointer to the invoice data in 'REC' and a flag that tells if the invoice has been paid in full, or not.

"IVC REC" holds quantity shipped, date, back order quantity, shipping cost and accumulated quantity shipped. Getting it to show the accumulated quantity each time something was shipped, but not allowing the total to be added to if the operator wanted to change the quantity evaded me for a while. The solution turned out to be simple. Just put the total in a temporary variable until the invoice is committed and then put the data in it into the 'real' variable.

Another touch I (and I expect Rush Caley) will like, is when a second, or greater, invoice is written against a given order, the values of the last invoice are displayed. When the new data is entered, it just over-writes the old. When the operator signals all is correct, any remaining old data is wiped off the display leaving only the new invoice data to be verified.

Incidentally, the Sales Order module also creates the "SAL HIST.mmy". The 'mmy' represents a two digit month and one digit year code. Such as; September, month number 09, and 1989, year number 9. This code can give a monthly identification (separation) over a ten year period.

The file contains only the sales order number of the orders that were generated in any given month. Presently the module doesn't exploit that information, but it would be a simple matter to write a routine that would detail the dollar value purchased by each customer, monthly and/or yearly, or even the previous month(s) and/or year(s). The same break-down could be calculated for items sold, etc; any of the data that relates to the sales order.

Tracing what happens when the operator inputs an invoice, they are asked for the Sales Order number, if it is not known, they are asked for the Customer number, if it too is not known, they are asked for the Customer Name (worst case for the program). The program searches the customer names in the index for letter combination that match the entered letters, and displays all matches, along with their number.

The operator is requested to input the number (much the same as if the operator had entered the number when first asked).

The program uses the number to get all the customer data from appropriate "CUS FILE" record, and displays it.

Then starting at the end, the program searches the "SAL HEAD" file backward for a record that has the same customer number. When a match is found the given sales order heading is displayed. It contains the first "SAL BODY" record number. The program gets that record and the next record it indicates, if any, and displays all found records.

The operator is then asked if the displayed sales order is the one wanted. If not, the program continues searching for a matching customer number in another "SAL HEAD" record. Either a proper match is found or a "End of File" message is displayed.

When the proper sales order is found, the display is scrolled to reveal the invoice input screen.

The article's program is the 'engine' for the A/R module. The next issue will allow the invoice to be printed and paid; all with separate accounts files to 'hold' the data.

In closing, "SYSMNU" needs LN (line) 10's POKE changed to 65497,0. If there is no selection number for the Accounts Receivable module in the menu, one should be put in to select "ACCREC".

The following changes to "SLORNT" need to be made to cause an order to be labeled "Invoice", etc.; prohibit changes to an order once it has been invoiced and several other action enhancements.

First, in the last issue I said LN 100 needed the following; insert [,100] in front of [:GOTO100]. It should have been [,110]. Sorry if that caused any confusion.

In LN 280; after [LOCATE0,5:PRINT] insert [" "], change the [1] in [LOCATE1,6] to [0], after [PRINT] insert [" "].

LN 290 should be changed to read [LOCATE 57,2:PRINT"Sales Order#:"SO\$;:LOCATE59,3 :PRINT"Order Date:";DT\$;:LOCATE62,4:PRINT "Cus PO#:"CP\$;:LOCATE61,5:PRINT"Due Date: ";DD\$;:LOCATE66,6:PRINT"TA#:";TA\$:RETURN]

Add LN; 450 WIDTH40:TIMER=0:LOCATE0,8:PRINT " Sales Order# ";:PRINTLEFT\$(SO\$+"",8);: PRINT" has already been";:PRINT:PRINT" Charged; it can NOT be altered.";

Add LN; 451 IF TIMER>200 THEN9040 ELSE451

(Note the following changes require previously generated "SAL HEAD.DAT", SAL BODY.DAT" and "SAL HIST.mmy" files be KILLED from your disk.)

CCBMS continued on 38

CoCo Clipboard Magazine

CCBMS continued from 37

In LN 1110; after [CP\$], insert [,8AS DD\$].

In LN 1120; after [CP\$(1)] insert [:LSET DD\$=DD\$(1)].

In LN 3200; After [SO\$:] insert a space [], replace the 1st [SO\$(1)] with [I\$], after [LOF(2)+1):] insert [SO\$(1)= RIGHT\$(I\$,LEN(I\$)-1):].

In LN 3210; after [PRINT"] insert [Order]

Change or add LN 3240 to read; 3240 LOCATE61,5:PRINT"Due Date: ";

Add LN; 3245 LOCATE66,6:PRINT"TA#:-":TA\$(1)="-"

In LN 3270; after [Number.] insert [TS\$;].

Add LN; 3275 LOCATE33,22:PRINT"Requested Ship Date, (Only mm/dd needed). ";:F\$=DT\$(1):X1=71:X2=71:Y1=5:LOCATEX1,Y1:PRINTF\$;:LN=0:LN(1)=8:X1=X1+LEN(DT\$(1)):GOSUB100:L N=LEN(F\$):IF LN<5 THEN3275 ELSE IF LN=5 THEN DD\$(1)=F\$+"/89" ELSE DD\$(1)=F\$

Add LN; 3276 F\$=RIGHT\$(F\$,3):IF LEFT\$(F\$,1)<>"/" THEN DD\$="":GOTO3275 ELSE LOCATE 71,5:PRINTDD\$(1):DD\$=DD\$(1)

In line 3310; after [TS\$] insert [TS\$]. (This is not a misprint)

In line 3350; after ["."] insert [+"-"].

Add LN; 3390 X\$=TG\$(2)+TG\$(3):LOCATE 8,22:PRINTTTS\$ " Percent Tax ?"TX\$(1)" "TS\$TTS\$;:F\$=TX\$(1): X1=41:X2=41: Y1=22:LN=0:LN(1)=2:X1=X1+LEN(TX\$(1)):GOSUB1 00:TX\$(1)=F\$:F\$=(VAL(F\$)*.01)*CT:PRINT"%":LO CATE67,22:PRINT"TAX ";:PRINTUSING "####.##";F;

Add LN; 3406 SOUND225,1:LOCATE25,22:PRINT"- RECEIPT Print/ INVOICE Post / NEITHER ? ,(R/I/N) ";:X1=68:GOSUB200:IF I\$="R" OR I\$="r" THEN TA\$(1)="Receipt ":GOTO6200

Add LN; 3407 IF I\$="I" OR I\$="i" THEN TA\$(1)="Invoice-":ELSE IF I\$="N" OR I\$="n" THEN TA\$(1)="Neither " ELSE3406

Add LN; 3425 IF INSTR(TA\$(1),"-")=0 THEN CLOSE #1:EX\$="."+LEFT\$(DT\$,2)+RIGHT\$(DT\$,1):OPEN"D",#1,"SAL HIST"+EX\$,8:FIELD #1,8AS SO\$:LSET SO\$=SO\$(1):PUT #1,LOF(1)+1

In LN 5040; in the beginning insert [SOUND225,1:IF INSTR(TA\$,"-")=0 THEN450 ELSE], after [CP\$] insert [:DD\$(1)=DD\$], after [(C/A/E)] insert [TS\$], after [Y1=22:] delete [SOUND225,1:].

In LN 5041; insert in the beginning [FG(2)=1:IF I\$="A" OR I\$="a" THEN504 ELSE].

Add LN; 5042 SOUND25,2:GOTO5041

In LN 5060; insert in the beginning [CLOSE2:GOSUB1100:]

Change LN 6030; to ['***].

Add or change the following lines:

6200 CLS:LOCATE11,9:PRINT"PRINTER MUST BE ON":LOCATE14,12:PRINT"Press Any Key":EXEC 44539:POKE65496,0:P=-2:CLS:PRINT#P,"C.C.B.M .S.";STRING\$(16,32);"BROWN'S SECRETARIAL SERVICES";STRING\$(17,32);"- Letters"

6201 PRINT#P,STRING\$(33,32)"27 Maple Avenue";STRING\$(22,32);"- Resumes"
6210 PRINT#P,STRING\$(28,32);"Franklinville, NY 14737";STRING\$(17,32);"- Reports":
PRINT#P,STRING\$(33,32);"(716) 676-9965";
STRING\$(21,32);"- Research":PRINT#P:
PRINT#P:PRINT#P

In LN 6220, after [TA\$] insert [(1)]

In LN 7030; move everything after [choice,"] to a new line 7035, after [GOSUB2040:] insert [LOCATE35,0:] and delete [PRINT:PRINT:PRINT" ";:], after [PRINT"] insert [- HINTS -";:LOCATE5,2:PRINT"],

(Add line; [7035 PRINTTTS\$;"noted by (Y/N) or (N/Y). The first letter, N or Y, is the"])

In line 7998; after [GOSUB2040:] insert [LOCATE35,0:ATTR0,0,U:] delete [PRINT:] and after [PRINT] insert ["- HINTS -";:LOCATE0,1:ATTR0,0:].

In line 9040; after [CP\$(1)=""] insert [:DD\$(1)=""].

Add the following lines:

12032 ' operation. Lines 7081 thru 7083.
12033 '*** 1.0.3, Allow negative dollars to be entered in the sales order, a credit. Line 100, add [,100] just before [:GOTO100]. Line 3350 add [+"-"] just after ["."].
Line 3, change the 2 to 3.

12034 '*** 1.1.3, Add Sales Order Printout. Change line 3. Add lines 3407 and 6200 thru 6280.

12035 '*** 1.1.4, Add repeat ability to

CCBMS continued on 39


```
GOTO100 ELSE F$=LEFT$(F$,LEN(F$)-1):LOCATEX2,Y1:PRINTF$;STRING$(LN(1)-LEN(F$),46);X1=X1-1:FOR X=1 TO 150:NEXT:POKE343,255:GOTO100
130 IF LEN(F$)=0 THEN SOUND50,1:GOTO100 ELSE F$="":X1=X2:LOCATEX1,Y1:PRINTSTRING$(LN(1),46);:SO UND224,1:GOTO100
200 LOCATEX1,Y1:ATTRO,0,B:PRINT":I$=INKEY$:IF I$="" THEN 200 ELSE ATTRO,0:RETURN
220 WIDTH40:LOCATE13,9:PRINT"- LOADING DATA -":GOSUB1030:RETURN
230 WIDTH40:LOCATE2,9:PRINT"- DID NOT FIND, (MORE); OR THERE IS NO":PRINT" CUSTOMER WITH:":SO UND50,2:LOCATE4,14:RETURN
240 GOSUB1040:FOR X=1 TO LOF(1):POKE65496,0:GET #1,X:POKE65497,0:CS$(X+1)=CS$:CN$(X+)=CN$:NEXTX:RETURN
270 GOSUB1040:GOSUB1110:POKE65496,0:GET #2,F:GET #1,VAL(CN$):POKE65497,0:SO$(0)=SO$:RETURN
271 Y=Y+1:LOCATE0,0:PRINTY" / ";:IF Y>LOF(2) THEN272 ELSE POKE65496,0:GET #2,Y:POKE65497,0:PRINTF$"-CN$":IF VAL(F$)=VAL(CN$) THEN F1$=F$:CN$(2)=CN$:F=Y:RETURN ELSE271*** FOR/NEXT gets lost
272 GOSUB390:PRINT"Customer No " F$:GOSUB450:GOTO9040
275 Y3=LOF(2)+1:LOCATE33,11:PRINT"-SEARCHING -":GOSUB1110
276 Y3=Y3-1:IF Y3<1 THEN 272 ELSE GOSUB1110:POKE65496,0:GET #2,Y3:POKE65497,0:IF VAL(F$)=VAL(CN$) THEN F1$=F$:FB$(0)=FB$:CN$(2)=CN$:F=Y3:RETURN ELSE276
277 STOP
280 LOCATE1,2:PRINTCS$;:LOCATE0,3:PRINT" FL$:LOCATE1,4:PRINTTR$:LOCATE0,5:PRINT" CT$", " TT$"
"ZP$:LOCATE0,6:PRINT" CN$" >> > "CM$" <<<:RETURN
290 LOCATE57,2:PRINT"Sales Order #: "SO$;:SO$(0)=SO$:LOCATE59,3:PRINT"Order Date: ";DT$:LOCATE62,4:PRINT"Cus PO#: "CP$:LOCATE61,5:PRINT"Due Date: ";DD$:LOCATE66,6:PRINT"TA# ";TA$:RETURN
300 LOCATE0,7:PRINTSTRING$(127,45):LOCATE0,8:PRINT"LN "PI$ ITEM # "PI$ DESCRIPTION "PI$ QTY-UNIT "PI$ $$/UNIT "PI$ EXTEN $$ "PI$PI$ Sh'd "PI$ Date "PI$ BO "PI$ Shp $ "PI$ C S'd "PI$PI$ LN";
301 LOCATE0,9:PRINTSTRING$(127,45):FOR X=10 TO 21:LOCATE0,X:PRINT:LOCATE3,X:PRINTPI$TS$PI$TS$TS$TS$ "PI$TS$" "PI$" "PI$TS$PI$PI$" "PI$TS$PI$" "PI$" "PI$" "PI$PI$:NEXT:PRINT:C=1:Y1=10:Y2=10:RETURN
305 F$=SO$:SO$(1)=SO$:TX=VAL(TX$):IF LOF(4)=0 THEN SO$="":GOTO306 ELSE GOSUB271:C=VAL(ID$):Z1=C:POKE65496,0:GET #5,C:POKE65497,0306 LOCATE83,C+9:PRINTUSING"####";VAL(SQ$);:LOCATE90,C+9:PRINTSE$;:LOCATE107,C+9:PRINTUSING"###.##";VAL(SX$);:LOCATE117,C+9:PRIN
```

```
TUSING"####";VAL(TH$);:LOCATE124,C+9:PRINTUSING"###";C;:BO=VAL(QT$(C))-VAL(TH$(C)):LOCATE101,C+9308 IF BO<1 THEN BO$=" - ":PRINTUSING"% %";BO$;:RETURN ELSE PRINTUSING"####";BO;:RETURN
315 LOCATE67,X:PRINT"TAX ";:PRINTUSING"####.##";(.01*VAL(TX$))*VAL(SU$);:PRINT" PI$PI$:LOCATE65,X+1:PRINT"TOTAL ";:PRINTUSING"####.##";VAL(GT$);:PRINT" PI$PI$;
320 F=VAL(FB$):C=1:GOSUB1210:FOR X=10 TO 22:POKE65496,0:GET #3,F:POKE65497,0:RN$(C)=RN$:LOCATE0,X:PRINTLE$;:LE$(C)=LE$:LOCATE5,X:PRINTIN$;:IN$(C)=IN$:LOCATE16,X:PRINTDS$;:DS$(C)=DS$:LOCATE49,X:PRINTUSING"####";VAL(QT$);:QT$(C)=QT$
330 LOCATE54,X:PRINTUT$;:UT$(C)=UT$:LOCATE60,X:PRINTUSING"####.##";VAL(DU$);:DU$(C)=DU$:LOCATE71,X:PRINTUSING"####.##";VAL(ED$);:ED$(C)=ED$:F=VAL(NB$):NB$(C)=NB$:C=C+1:F=VAL(NB$):IF F>0 THEN NEXTX:C=1:RETURN ELSE CL=F:C=1:RETURN
350 CS=0:SC=0:FOR X=1 TO 12:IF SQ$(X)="" THEN NEXT ELSE CS=CS+VAL(SQ$(X))*VAL(DU$(X)):SC=SC+VAL(SX$(X)):NEXT
360 LOCATE97,3:PRINT"Value Items Shipped: ";:PRINTUSING"#####.##";CS;:LOCATE113,4:PRINT"Tax: ";:TX=CS*(VAL(TX$)/100):PRINTUSING"#####.##";TX;:LOCATE101,5:PRINT"Shipping Charge: ";:ATTRO,0,U:PRINTUSING"#####.##";SC;:ATTRO,0
370 LOCATE97,6:PRINT"--> PLEASE PAY --> ";:PRINTUSING"#####.##";CS+TX+SC;:RETURN
390 LOCATE0,8:PRINT:LOCATE32,8:PRINT"- END OF FILE -":SOUND50,2:FOR X=1 TO 200:NEXT:GOTO9040
450 TIMER=0
451 IF TIMER>200 THEN RETURN ELSE451
490 LOCATE0,0:ATTRO,0,U:PRINT"Acts Rec'ble";:PRINTSTRING$(113,32);:LOCATE74,0:PRINT"ACCREC";:RETURN
500 SW=1:PRINT:LOCATE0,3:PRINT"Sales Order No .....":LOCATE25,3:PRINT"Cus No .....":LOCATE40,3:PRINT"Cus Name "STRING$(30,46)
510 PRINTSTRING$(80,45)
520 SOUND224,1:PRINT"EDITOR COMMANDS: BACKSPACE - L Arrow, CLEAR - SF/L Arrow, END INPUT - <ENTER>";:ATTRO,0,U:PRINT:PRINTSTRING$(80,32);:ATTRO,0
530 X$=TG$(2)+TG$(3):LOCATE14,22:PRINT"- INPUT: Sales Order NUMBER or <ENTER> for Customer NUMBER Choice.";X1=15:X2=15:Y1=3:LN=0:LN(1)=8
540 GOSUB100:IF F$>"" THEN F=VAL(F$):GOSUB1250:GOTO270:RETURN
550 SW=2:X$=TG$(2)+TG$(3):LOCATE23,22:PRINT"Customer NUMBER or <ENTER> for Customer NAME.";X1=32:X2=32:Y1=3:LN=0:LN(1)=6:GOSUB100:IF F$>"" THEN F$=RIGHT$("00000"+F$,6):GOSUB275:RETURN
560 SW=3:LOCATE31,11:PRINT"- LOADING DATA -":GOSUB240:LOCATE0,11
```

```
:PRINT:LOCATE33,22:PRINT"AME.":X1=49:X2=49:Y1=3:LN=0:LN(1)=30:SO UND225,1:GOSUB50:IF F$>"" THEN CS$=F$ ELSE9040
570 LOCATE23,22:PRINT"Number of Customer";:C=0:A1=0:B1=9:X1=42:F OR X=1 TO LOF(1):IF C=12 THEN A1=40:B1=9
580 IF C=24 THEN PRINT" or 'M', More";:C=0:FL=1:X1=53:A1=0:B1=9:LN=0:LN(1)=6:X1=66:Y1=22:X2=66:F$="":GOSUB50:IF F$="M" THEN590 ELSE F=VAL(F$):IF F=0 THEN640 ELSE620
590 IF INSTR(CS$(X+1),CS$)>0 THEN LOCATEA1,B1:Y=X:PRINTUSING"###.##";X;:PRINT". "CS$(X+1):B1=B1+1:C=C+1
600 NEXTX:IF C=0 THEN640 ELSE IF FL=0 AND C=1 THEN X=Y:F=X:GOTO630
610 LOCATEX1,22:PRINT":F$="":LN=0:LN(1)=6:Y1=22:X2=X1:GOSUB50:F=VAL(F$):IF F=0 THEN9040
619 GOSUB1250
630 GOSUB1040:POKE65496,0:GET #1,F:POKE65497,0:LOCATE0,6:PRINT:IF F$>"" THEN F$=CN$:GOTO650
640 GOSUB230:PRINT"CS$";:GOSUB450:GOTO9040
650 GOSUB280:GOTO275
999 EXEC44539:STOP
1000 ***
1010 *** Disk I/O ***
1020 ***
1030 OPEN"D",#1,"CUS FILE",177:RETURN
1040 FIELD #1,6AS CN$,30AS CS$,25AS FL$,25AS TR$,15AS CT$,2AS TT$,10AS ZP$,45AS CM$,13AS PH$,3AS TY$,3AS CL$:RETURN
1100 OPEN"D",#2,"SAL HEAD",99:RETURN
1110 FIELD #2,6AS CN$,30AS CS$,8AS SO$,8AS DT$,8AS CP$,8AS DD$,8AS TA$,8AS SU$,2AS TX$,8AS GT$,5AS FB$:RETURN
1130 POKE65496,0:PUT #2,VAL(SO$):POKE65497,0:RETURN
1200 OPEN"D",#3,"SAL BODY",70:RETURN
1210 FIELD #3,3AS RN$,2AS LE$,8AS IN$,30AS DS$,4AS QT$,2AS UT$,8AS DU$,8AS ED$,5AS NB$:RETURN
1250 IF F>LOF(2) OR F<1 THEN SOUND50,2:LOCATE14,22:PRINT"- NUMBER is larger or smaller than existing numbers. "TS$;:LOCATE67,22:SOUND50,2:GOSUB450:GOTO 9040 ELSE RETURN
1300 OPEN"D",#4,"IVC NUMB",17:RETURN
1310 FIELD #4,1AS IS$,8AS SO$,8AS ID$:RETURN
1320 LSET IS$=IS$(1):LSET SO$=SO$(1):LSET ID$=ID$(1):RETURN
1330 POKE65496,0:PUT #4,VAL(IV$(0)):POKE65497,0:RETURN
1400 OPEN"D",#5,"IVC REC",32
1410 FIELD #5,8AS IV$,4AS SQ$,8AS SE$,8AS SX$,4AS TH$:RETURN
1420 LSET IV$=IV$(1):LSET SQ$=SQ$(1):LSET SE$=SE$(1):LSET SX$=SX$(1):LSET TH$=TH$(1):RETURN
1430 POKE65496,0:PUT #5,VAL(ID$(1))+X-1:POKE65497,0:RETURN
1999 EXEC44539:STOP
```

CCBMS continued from 40

```

2000 '***
2010 '*** Inquire Identify ***
2020 '***
2030 GOSUB10111:GOSUB1030:GOSUB1
100:GOSUB1200:GOSUB1300:GOSUB140
0:GOSUB490:LOCATE31,0:ATTRO,0,U:
PRINT" - SHIP STATUS - ";LOCATE
0,1:PRINT"";:ATTRO,0:GOSUB500'***
* don't combine w/line below
2031 GOSUB1040:GOSUB1110:POKE654
96,0:GET #2,F:GET #1,VAL(CN$):PO
KE65497,0
2032 GOSUB280:GOSUB290:GOSUB300:
GOSUB315:GOSUB1310:Y=LOF(4):IF Y
=0 THEN2033 ELSE FOR X=Y TO 1 ST
EP-1:GET #4,X:IF SO$=SO$(0) THEN
IV=X:GOTO2035 ELSE NEXT
2033 LOCATE104,2:PRINT"Last Invo
ice#: - NONE -";:GOSUB4035:GOTO9
040
2035 Z=VAL(ID$):GOSUB1410:FOR C=
1 TO 12:IF LE$(C)>"" THEN POKE65
496,0:GET #5,Z:POKE65497,0:SQ$(C
)=SQ$:SX$(C)=SX$:TH$(C)=TH$:IF V
AL(IV$)=IV THEN GOSUB306:Z=Z+1:IF
Z<=LOF(5) THEN NEXT'*** don't
combine
2040 LOCATE104,2:PRINT"Last Invo
ice#: "IV$;:GOSUB350:GOSUB4035:F
OR X=0 TO 12:IV$="":SQ$(X)="":SE
$(X)="":SX$(X)="":TH$(1)="":NEXT
:CS=0:SC=0:GOTO9040
2999 EXEC44539:STOP
3000 '***
3010 '*** Add/Create new invoice
***
3020 '***
3030 GOSUB10111:GOSUB1030:GOSUB1
100:GOSUB1200:GOSUB1300:GOSUB140
0:GOSUB490
3035 LOCATE31,0:ATTRO,0,U:PRINT"
- INVOICE ENTRY -";:LOCATE0,1:P
RINT"";:ATTRO,0:LOCATE0,5:PRINT"
";:FOR X=1 TO 26:PRINTSD$;:NEXT
X:PRINT:GOSUB500
3040 '*** GOSUB1040:GOSUB1110:PO
KE65496,0:GET #2,F:GET #1,VAL(CN
$):POKE65497,0
3050 IF TA$<>"Invoice-" AND TA$<
>"Invoice" THEN LOCATE16,2:ATT
RO,0,B:PRINT"This Sales Order Is
NOT Setup To Be Invoiced.";STRI
NG$(18,32);:LOCATE62,22:GOSUB450
:ATTRO,0:GOTO9040
3052 GOSUB280:GOSUB290:GOSUB300:
GOSUB315:GOSUB1310:C=0:IF LOF(4)
=0 THEN X=1:GOTO3053 ELSE FOR X=
LOF(4) TO 1 STEP-1:GET #4,X:IF S
O$=SO$(0) THEN IV$(0)=IV$:IV=X:G
OTO3055 ELSE NEXT
3053 ID$="":LOCATE104,2:PRINT"La
st Invoice#: - NONE -";
3055 SOUND225,2:LOCATE28,22:X1=5
8:Y1=22:PRINT"- Correct Sales Or
der ? (N/Y)";:GOSUB200
3060 SOUND225,2:IF I$<>"Y" AND I
$<>"y" THEN IF SW=1 THEN9030 ELS
E GOSUB276:GOTO3050
3062 IF ID$>"" THEN Z=VAL(ID$):G
OSUB1410:FOR C=1 TO 12:IF LE$(C)
>"" THEN POKE65496,0:GET #5,Z:PO
KE65497,0:IF VAL(IV$)=IV THEN SQ
$(C)=SQ$:SX$(C)=SX$:TH$(C)=TH$:G
OSUB306:Z=Z+1:IF Z<=LOF(5) THEN
NEXT
3063 LOCATE103,2:PRINT"Last Invo

```

```

ice#; "IV$;:GOSUB350:C=0'*** do
not combine
3064 FOR X=1 TO 12:SQ$(X)="":SE$
(X)="":SX$(X)="":NEXT:SC=0
3065 IF C>0 THEN F$=STR$(C):GOTO
3070 ELSE LOCATE14,22:SOUND225,1
:PRINT"- INPUT: Line Number To E
nter Ship Info ? ";F$="":X1=56:
X2=56:Y1=22:LN=0:LN(1)=2:GOSUB10
0
3070 C=VAL(F$):IF C>13 THEN3075
ELSE IF LE$(C)=" OR F$=" THEN3
075 ELSE POKE&HFF9F,175:LOCATE12
5,C+9:PRINTRIGHT$(" "+F$,2):GOTO
3085
3075 SOUND25,2:C=0:GOTO3065
3080 IF TH$>"" THEN TH$(C)=TH$
3085 LOCATE14,22:PRINTSTRING$(42
,32);:LOCATE88,23:PRINT"- INPUT:
Shipped Quantity or L/R Arrows"
;:X1=83:X2=83:Y1=C+9:LN=0:LN(1)=
4
3090 GOSUB200:IF I$=CHR$(8) THEN
POKE&HFF9F,128:GOTO3090 ELSE IF
I$=CHR$(9) THEN POKE&HFF9F,175:
GOTO3090 ELSE F$=I$:IF VAL(F$)<1
THEN F$="0"
3095 IF VAL(F$)<1 THEN SQ$(C)="0
":PRINTUSING"####";0; ELSE PRINT
" ";:F1$=F$:X1=84:X2=83:LN(1)
=4:LOCATE111,23:PRINT"
";:LOCATE83,Y1:PRINTUSING"%
";:F1$;:GOSUB100:SQ$(C)=F$:LOCAT
E83,C+9:PRINTUSING"####";VAL(F$)
;
3100 X$=TG$(2)+TG$(3)+"/":LOCATE
95,23:PRINT"Ship Date. (Only mm/
dd needed)";:F$=SE$(0):X1=90:X2=
90:Y1=C+9:LN=0:LN(1)=8:X1=X1+LEN
(SE$(C)):GOSUB100:LN=LEN(F$):IF
LN<5 THEN3100 ELSE IF LN=5 THEN
SE$(C)=F$+"/89" ELSE SE$(C)=F$
3105 F$=RIGHT$(F$,3):IF LEFT$(F$
,1)<>"/" THEN3100 ELSE LOCATE90,
C+9:PRINTSE$(C);:SE$(0)=SE$(C)
3110 TH$=TH$(C):TH$(C)=STR$(VAL(
TH$)+VAL(SQ$(C))):BO=VAL(OT$(C))
-VAL(TH$(C)):IF BO<=0 THEN BO$(C
)=" -" ELSE BO$(C)=STR$(BO)
3115 LOCATE101,C+9:PRINTUSING"%
";:BO$(C);:LOCATE117,C+9:PRINTU
SING"####";VAL(TH$(C));
3120 X$=X$+":LOCATE95,23:PRINT
"Shipping Expense. "TS$;:X1=107
:GOSUB200:IF ASC(I$)=13 THEN3120
ELSE F$=I$:LN(1)=6:PRINTUSING"%
";:F$;:X1=108:X2=107:GOSUB10
0:F$=F$+":IF INSTR(F$,".")>4 T
HEN SOUND25,2:GOTO3120
3125 SX$(C)=LEFT$(F$,LEN(F$)-1):
F=VAL(F$):LOCATE107,Y1:PRINTUSIN
G"###.###";:F;:SX$=SX$+F
3130 LOCATE88,23:PRINT"Line Corr
ect ?, (N/Y) ";:X1=110:X2=
X1:Y1=23:SOUND225,1:GOSUB200:IF
I$="Y" OR I$="y" THEN3135 ELSE T
H$(C)=TH$:SC=0:F$="":GOTO3065
3135 LOCATE88,23:PRINT"Ship Anot
her Line ?, (N/Y) ";:X1=114:Y1=23
:SOUND225,2:GOSUB200:IF I$<>"Y"
AND I$<>"y" THEN3145 ELSE POKE&H
FF9F,128:C=0:GOTO3065
3145 C=C+1:F$=STR$(LOF(4)+1):F$=
RIGHT$(F$,LEN(F$)-1):F$="0000000
"+F$+"P":IV$(0)=RIGHT$(F$,8):LOC
ATE103,2:PRINT" Invoice#: "
IV$(0)
3150 FOR X=1 TO 12:IF SQ$(X)="
THEN LOCATE82,X+9:PRINT" "P

```

```

I$ "PI$" "PI$" "PI$"
"PI$"
3165 NEXT:GOSUB350:LOCATE88,23:P
RINT"COMMIT INVOICE ? ",(N/YES
)";:SOUND225,1:F$="":X1=105:X2=X
1:Y1=23:LOCATEX1,23:LN=0:LN(1)=3
:GOSUB50:IF F$="YES" OR F$="yes"
THEN3170 ELSE9040
3170 IS$(1)=RIGHT$(IV$(0),1):SO$
(1)=SO$(0):X=LOF(5)+1:ID$(1)=STR
$(X):GOSUB1310:GOSUB1320:GOSUB13
30:IV$(1)=IV$(0):FOR X=1 TO 12:I
F LE$(X)=" THEN3180
3171 SQ$(1)=SQ$(X):SE$(1)=SE$(X)
: SX$(1)=SX$(X):TH$(1)=TH$(X):GOS
UB1410:GOSUB1420:GOSUB1430:NEXT
3180 GOSUB1110:LSET TA$="Invoice
":GOSUB1130:FOR X=0 TO 12:TH$(X
)="":SQ$(X)="":NEXT:CS=0::GOTO90
40
3999 EXEC44539:STOP
4000 '***
4010 '*** Field Display ***
4020 '***
4035 LOCATE27,23:SOUND224,1:X1=5
7:Y1=23:IF SW=1 THEN4050 ELSE PR
INT"- Correct Sales Order ? (N/Y
)";:GOSUB200
4040 SOUND225,2:IF I$<>"Y" AND I
$<>"y" THEN IF SW=1 THEN9030 ELS
E GOSUB276:GOTO2031
4050 LOCATE18,23:PRINT"- L/R Arr
ow, or Press Any Key to Continue
.";:X1=60:Y1=23:SOUND224,1
4060 GOSUB200:IF I$=CHR$(8) THEN
POKE&HFF9F,128:GOTO4060 ELSE IF
I$=CHR$(9) THEN POKE&HFF9F,175:
GOTO4060 ELSE CLS:SOUND225,2:RET
URN
4999 EXEC44539:STOP
6030 GOTO9040'*** next issue
7000 '***
7010 '*** Hints ***
7020 '***
7030 WIDTH80:GOSUB490:LOCATE35,0
:ATTRO,0,U:PRINT"- HINTS -";:ATT
RO,0:LOCATE0,1:PRINT"":LOCATE5,2
:PRINT"GENERAL";:ATTRO,0:PRINT":
:PRINT:PRINT"-The oper
ator is often requested to make
a Yes/No choice,"
7035 PRINTTS$;"noted by (Y/N) or
(N/Y). The first letter, N or
Y, is the"
7040 PRINTTS$;"default choice an
d will work with any key. The s
econd":PRINTTS$;"letter must be
pressed directly.":PRINT:PRINT"
-Upon an irreversible ch
oice, the operator will be asked
to":PRINTTS$;"spell the choice;
such as, (N/YES).
7050 PRINT:PRINT"-Menu
items 3 through 8 are reserved f
or use with later":PRINTTS$;"rev
isions."
7060 PRINT:PRINT" ";:A
TTRO,0,U:PRINT"INQUIRE";:ATTRO,0
:PRINT":":PRINT:PRINT"
-ENTER an Invoice before choosing
INQUIRE, #2; otherwise an":PRIN
TTS$;"Error will result.":GOSUB7
998
7070 PRINT:PRINT:PRINT"
-INQUIRE searches on lowercase";
7080 PRINT" and uppercase letter
s separately.":PRINTTS$;"If you

```

CCBMS continued on 44

Glad You Asked . . ."



Robert Gault

There are standards for TVs and monitors. Because of these standards, you can safely buy any monitor and be sure that the requirements of the composite or TTL-RGB inputs will match your computer. It seems, however, that this is not the case for analogue RGB.

Have I got your attention? The Coco 3 is analogue RGB after all. Yes, you may have read about custom cables and positive, negative, or composite sync pulses; that's not what I mean. Have you ever seen anything in print about signal size?

This became important to me when I started considering the possibilities of the RASCAN 4096 color mode. In fact, I had been having enough problems with the color settings in the control function of Multi-View to wonder if my monitor could handle the full 64 colors of the CoCo, much less 4096 colors. I just could not see the variety of colors I should have. Many colors seemed to be identical.

I currently use a Magnavox multisync monitor, the 8CM873, with my Coco 3. This monitor has had excellent reviews and, better still, I had been able to buy it at a big discount. Everything seemed fine until I tried for a wide range of on screen colors.

I wish I could tell you what to do for a wide variety of monitors (which are good and how to fix the bad ones) but I don't have the information. Still, chances are that your RGB monitor will be the popular 8CM515 (the baby brother of the 8CM873) so keep reading.

Run the test program given below. This test is designed to cause maximum difficulty for a monitor's contrast and color separation ability and you may need to set the brightness and contrast controls just right for success. With the test program and the following as an example, you should be able to adjust your own unit if there is a need.

With either a white or black background you should see, on the first screen, 9 different colors and, on the second screen, the low level colors should at least be visible. If you can easily see all colors of both screens against a black background but not against a white background, then your Coco and RGB monitor may not be fully compatible. The third screen, with 7 luminance levels, will show up any problems

with contrast. There should be no change in the contrast panel as most of the screen changes from black to white. A decrease in brightness of the dark grays or any other change will indicate an overloading problem.

The Coco 3 is designed to output at the RGB lines, a positive video signal of .8 to 2.0 volts DC into a 75 ohm load. The circuit is a simple transistor voltage follower biased into the linear region with no provision for adjustment. My Magnavox monitor (I bought the service manual) seems to require an RGB input signal of between .3 to .65 volts peak to peak. (Jim Snider, of J&L's CoCo Corner BBS, tells me that the popular 8CM515 is similar; requiring .7 volts p-p.) Coco is sending 2.0 minus .8 for 1.2 volts p-p. This is 2 to 4 times too much signal!

The result is that with a mostly white screen, these monitor's luminance automatic gain controls can be driven into limiting. With the 8CM873's controls set for minimum contrast and brightness, clipping occurred under most conditions and color separation was marginal. Even the monitor's internal sub-brightness and sub-contrast controls were not able to correct the problem. The 8CM515 is more resistant to overloading (probably different circuitry), but still had some problems.

With correct signal matching, the relative brightness of a picture will not change the values of minimum or maximum brightness set by the brightness and contrast controls. Brightness limiting does cause such a change which is perceived by the eye as a change in contrast and loss of color discrimination.

My solution, which is effective if not ideal, is to add resistance to the connecting cable to reduce the maximum signal to about .4 volts p-p thus matching the requirements of my monitor. This was done by inserting a 150 ohm resistor in each of the R, G, and B cable leads (see diagram.) If you have the same problem, you will need to determine, by trial and error, if this will work for you and what value resistor to use for your own monitor. Make sure that the resistors are matched (use an ohmmeter) or that they are of at least 2% tolerance. You may change your monitors color balance otherwise.

Continued On 43

CoCo Clipboard Magazine

Continued From 42

One nice feature of this fix is that you don't need to open either your Coco or your monitor.

The results of the cable modification have been checked both in use and with an oscilloscope and no problems of any kind have been found with the 8CM873 monitor. The color separation and contrast of the 8CM873 are now as excellent as they should have been. The 8CM515, Jim reports, now has better color quality. Jim also used 150 ohms, but 100 ohms may be better for the 8CM515.

If you have questions, you can write to the magazine or call me at my favorite Coco

only TUBBS, J&L's CoCo Corner, Taylor, Michigan, (313)-292-4713, 300-1200-2400 baud 8/N/1. Leave a message for Robert Gault #20.



This program is available on *ClipDisk*. A single issue is just \$9.95, a full year is only \$49.95. Phone orders are accepted at (716) 679-0126 - please have your credit card ready. You may also order by mail by enclosing your check or money order to *CoCo Clipboard Magazine*. Our address is 3742 U.S. 20, Box 3, Fredonia, NY 14063 U.S.A. Slightly higher prices for overseas orders.

10 POKE2HFFD9,0	11	12,MINIMUM COLOR,13,SHIFT,14,ADJ
20 ON BRK GOTO 780:ON ERR GOTO 7	110 DATA 5,4,4,6,2,2,3,1,1	UST CONTRAST,15,IF NEEDED
30	120 '*****	180 DATA 16,HIT ANY KEY,17,TO,18
30 DIM MS\$(24)	*****	,CONTINUE,19,2 - CONTRAST ADJUST
40 '*****	130 ' TEXT STRINGS ARE NUMBERED	PANEL
*****	FOR EASY EDITING	190 DATA 20,ADJUST FOR BEST PICT
50 'SETUP GRAPHIC BUFFERS	140 '*****	URE; THEN HIT ANY KEY TO CONTINU
60 '*****	*****	E
*****	150 DATA 1,SET: BLACK LEVEL SO TH	200 DATA 21,WATCH THE PANEL AS S
70 A=108:FOR I=1TO7:HBUFF I,A:NE	AT BACKGROUND,2,CAN JUST NOT BE	CREEN FILLS WITH WHITE,22,IF GRA
XT	SEEN,3,THEN	YS GET DARKER YOU HAVE TROUBLE!
80 GOSUB640:GOSUB500	160 DATA 4,MAKE YOUR SELECTION,5	210 DATA 22,YOU MAY WANT TO COVE
90 '*****	,0 - BLACK BACKGROUND,6,1 - WHIT	R THE RIGHT PORTION OF SCREEN WI
*****	E "",7,MAXIMUM,8,MINIMUM	
100 DATA 38,36,37,22,18,19,13,9,	170 DATA 9,RED,10,GREEN,11,BLUE,	

Continued On 44



When Tandy introduced OS-9 Level 2, you bought it. Now, no more excuses.



An Enjoyable, Hands-On Guide To OS-9 Level 2
On The Color Computer 3
\$32.95 + \$2.50 P&H, US funds
Includes disk. Over 280 pages of lessons, essays & tips.
Requires 2 drives, 512K, 80-column monitor.

Turbocharge your OS-9 system!

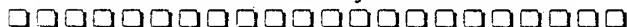
THE GOLDBERG UTILITIES

Power-packed disk with tutorial-style documentation!

Save disk space (Pk) ☐ Find lost files (Grep) ☐ Copy multiple files (Zcopy) ☐ Sort long lists (Sort) ☐ Clear screen with ease (Cls) ☐ Convert between hex, decimal, and binary (Val) ☐ **FIFTEEN COMMANDS IN ALL!**

\$24.95 + \$2.50 S&H.

Kenneth-Leigh Enterprises
1840 Biltmore Street NW Suite 10
Washington DC 20009 202/232-4246
Personal check & money order welcome.



If you've never heard what a CoCo and a MIDI synthesizer can do together, you're in for a real treat!

Your CoCo can act as a sophisticated music controller. Use it to compose music on a graphics screen that looks just like printed music, and then play it on your synthesizer for incredible 8-part music. Or use it as a ten track tape recorder; advanced programming then lets you edit, modify, and perfect your performance as much as you wish.



- Lyra (an 8 part MIDI music composition program using pulldown menus and icons; a great way to enjoy all the music you could never hope to play!) \$59.95
- Lyra Library (a 16 disk collection of music transcriptions for Lyra) \$14.95 each disk
- The Lyra Companion (a 100 page book packed with tips on using Lyra) \$9.95
- CoCo MIDI 3 (a complete professional quality MIDI sequencer) \$150.00
- FBEDIT (Edit and create new voices for the FB-01) \$29.95



Rulafor Research
P.O. Box 143
Imperial Beach, CA 92032
(619) 690-3648 (evenings 6-10 PT)

CCBMS continued from 41

```
have input a customer name using
lowercase, be sure to use":PRIN
TTS$;"lowercase during INQUIRY.
7081 PRINT:PRINT:PRINT" ";;A
TTRO,0,U:PRINT"Invoice Number";:
ATTR0,0:PRINT":":PRINT:PRINT"
-Note the last character o
f the invoice number is a letter
. 'P':PRINTTTS$;"denotes the in
voice is 'oPen', not paid; would
have used a 'O'";:PRINTT
7082 PRINT"but it looks to much
like a zero. When the invoice h
as been":PRINTTTS$;"paid in full
the 'P' will be changed to a 'C'
. It denotes":PRINTTTS$;"Closed.
";:GOSUB7998
7997 GOTO9040
7998 LOCATE27,23:PRINT"Press Any
-Key to continue.";:EXEC44539:CL
S:LOCATE35,0:ATTR0,0,U:PRINT"- H
INTS -";:LOCATE0,1:ATTR0,0:RETUR
N
7999 EXEC44539:STOP
9000 '***
9010 '*** Setup and Menu ***
9020 '***
9030 PCLEAR1:CLEAR1999:FILES 5,7
50:DIM CS$(101),CN$(101),RN$(101
),LE$(13),IN$(12),DS$(12),QT$(12
),UT$(12),DU$(12),ED$(12),NB$(13
),IV$(12),SQ$(12),SE$(12),SX$(12
),TH$(12):CLS1:POKE&HFF94,2
9035 TG$(1)=CHR$(1)+CHR$(4)+CHR$(
8)+CHR$(9)+CHR$(10)+CHR$(12)+CH
R$(13)+CHR$(21)+CHR$(189)+CHR$(2
```

```
14):TG$(2)="123456789":TG$(3)="0
"+CHR$(8)+CHR$(21)+CHR$(13):LD$=
CHR$(127):SD$="-":TS$="
":PI$=CHR$(124):GOSUB10111
9040 CLOSE:CT=0:C=0:F$="":CN$(1)
="":CS$(1)="":SO$(1)="":DT$(1)="
":CP$(1)="":DD$(1)="":TA$(1)="":
FB$(1)="":SU$(1)="":TX$(1)="":GT
$(1)="":SU$="":TX$="":WIDTH40:PR
INT"Ac Rec Menu - CCBMS -";:
LOCATE34,0:PRINT"ACCRC";
9045 FOR X=1 TO 12:LE$(X)="":IN$
(X)="":DS$(X)="":QT$(X)="":UT$(X
)="":DU$(X)="":ED$(X)="":NB$(X)=
"":NEXTX
9050 LOCATE8,3:PRINT"1. SHIP/INV
OICE Sales Order.":LOCATE8,5:PRI
NT"2. INQUIRE, Ship Status.":LOC
ATE8,7:PRINT"3.":LOCATE8,9:PRINT
"4.":LOCATE8,11:PRINT"5.":LOCATE
8,13:PRINT"6.":LOCATE8,15:PRINT"
7.
9060 LOCATE8,17:PRINT"8. REPORTS
, Sales Order.":LOCATE8,19:PRINT
"9. HINTS.":LOCATE7,21:PRINT"F2.
RETURN to Main Menu.":LOCATE9,2
3:PRINT"- SELECT (1 to 9 or F2)
";:SOUND245,1:X1=32:Y1=23
9070 LOCATEX1,Y1:ATTR0,0,B:PRINT
";:I$=INKEY$:IF I$="" THEN9070
ELSE ATTR0,0:ON INSTR(TG$(2)+CHR
$(4),I$)+1 GOTO9070,3030,2030,90
75,9080,9090,9100,9110,6030,7030
,9140
9075 SOUND224,2:GOTO9070'***3
9080 SOUND224,1:GOTO9070'***4
9090 SOUND224,1:GOTO9070'***5
9100 SOUND224,1:GOTO9070'***6
```

```
9110 SOUND224,1:GOTO9070'***7
9140 WIDTH40:CLS:LOCATE10,9:PRIN
T"- LOADING SYSTEM MENU -":POKE6
5496,0:RUN"SYSMNU.BAS"
10000 '***
10010 '*** 128 Column Display/Co
mposite Screen Setup ***
10020 '***
10030 EXEC44539:STOP
10111 WIDTH80:PALETTE 0,0:PALETT
E 8,63:POKE&HFF98,4:POKE&HFF99,&
H75:POKE&HE045,4:POKE&HE046,&H75
:POKE&HFE05,24:POKE&HFE06,62:POK
E&HFE07,0:POKE&HFF9F,128:POKE&HF
E00,&H20:POKE&HFE01,0:POKE&HFE04
,128:POKE&HFF90A,&H58:POKE&HFF8EC
,128:POKE&HFF8F4,24:CLS1:RE
10112 WIDTH32:PRINT:PRINT" IF YO
U ARE NOT USING A MONO- CHROM
E TERMINAL, DELETE 'GOTO
10111' IN LN9035. IF YOU ARE,
DELETE 'GOSUB10112' IN LN 10
111. (PRESS ANY KEY)":EXEC44539
:RETURN
11000 '***
11010 '*** Easy SAVE ***
11020 '***
11111 POKE65496,0:CLOSE:SAVE"ACC
REC":STOP
12000 '***
12010 '*** Revision Record ***
12020 '***
12030 '*** None
***'
```

**CoCo
Clipboard
Magazine**

Continued From 43

```
TH PAPER
220 DATA 23,TO MAKE VIEWING EASI
ER
230 FORI=1TO18:READ A:NEXT
240 FOR I=1TO24:READ A,MS$(I):NE
XT
250 '*****
*****
260 ' MAIN LOOP
270 '*****
*****
280 PALETTE0,0:PALETTE 1,63:REST
ORE
290 HSCREEN2:HCLS0:HCOLOR1,0:HPR
INT(1,0),MS$(1):HPRINT(9,1),MS$(
2)
300 HPRINT(16,5),MS$(3):HPRINT(
9,10),MS$(4):HPRINT(8,20),MS$(5)
:HPRINT(8,21),MS$(6):HPRINT(8,22
),MS$(19)
310 EXEC &HADFB:A$=INKEY$:IFA$<"
0" OR A$>"2"THEN310
320 IFA$="2"THEN680
330 IF A$="0" THEN PALETTE0,63:P
ALETTE1,0 ELSE PALETTE0,0:PALETT
E1,63
340 ' *****
350 ' COLOR PANELS
360 ' *****
370 GOSUB420:HPRINT(5,0),MS$(7):
GOSUB400:EXEC&HADFB
380 GOSUB420:HPRINT(5,0),MS$(8):
GOSUB400:EXEC&HADFB:GOTO280
390 '*****
*****
400 FORJ=0TO2:FOR I=0TO2:HCOLORJ
```

```
*3+I+2,1:HLINE(140,22*I+J*64)-(1
60,21+22*I+J*64),PSET,BF:NEXTI,J
:RETURN
410 '*****
*****
420 HCOLOR0,0:K=0:HCLS1:FORI=2TO
10:READ CL:HPRINT(20,3*K),STR$(C
L):PALETTE I,CL:K=K+1:NEXT
430 HPRINT(5,3),MS$(9):HPRINT(5,
11),MS$(10):HPRINT(5,19),MS$(11)
440 HPRINT(25,0),MS$(12):HPRINT(
28,1),MS$(13)
450 HPRINT(25,10),MS$(14):HPRINT
(25,11),MS$(15)
460 HPRINT(25,18),MS$(16):HPRINT
(28,19),MS$(17):HPRINT(25,20),M
S$(18):RETURN
470 '*****
*****
480 'SETUP FOR REPEAT VALUES
490 '*****
*****
500 XA=12:YA=26:CA=1
510 '*****
*****
520 'MAKE 7 SHADE OF GRAY PATCHE
S FOR FUTURE USE
530 '*****
*****
540 HGET(0,0)-(12,26),1
550 HCOLOR1,0:GOSUB770:HGET(8,0)
-(20,26),2
560 HLINE(32,0)-(48,26),PSET,BF:
HGET(32,0)-(44,26),3
570 HLINE(6,0)-(24,26),PSET,BF:H
COLOR2,0:GOSUB770:HGET(8,0)-(20,
26),4
580 HPUT(8,0)-(20,26),1,PSET:HCO
LOR2,0:HLINE(6,0)-(24,26),PSET,B
```

```
F:HGET(8,0)-(20,26),5
590 HCOLOR3,0:GOSUB770:HGET(8,0)
-(20,26),6
600 HLINE(6,0)-(24,26),PSET,BF:H
GET(8,0)-(20,26),7:RETURN
610 '*****
*****
620 'SETUP 640X192 GRAPHICS IN S
HADES OF GRAY RGB VALUES
630 '*****
*****
640 PALETTE0,0:PALETTE1,7:PALETT
E2,56:PALETTE3,63:HSCREEN4:HCLS0
:RETURN
650 '*****
*****
660 'PREPARE SPECIAL CONTRAST PA
TTERN
670 '*****
*****
680 GOSUB640:HCLS0:HCOLOR3,0:X=0
:FORY=0TO191STEP26:FORC=0TO6
690 HPUT(X+C*XA,Y)-(X+XA+C*XA,Y+
YA),C+CA,PSET:NEXT C,Y:GOSUB730
700 EXEC&HADFB:HLINE(92,0)-(639,
191),PSET,BF
710 HCOLOR0,0:FORI=0TO2:HPRINT(3
0,I+20),MS$(16+I):NEXT:SOUND220,
1
720 EXEC&HADFB:GOTO280
730 FORI=0TO4:HPRINT(14,I+1),MS$
(20+I):NEXT:RETURN
740 '*****
*****
750 'SET ALTERNATE PIXELS
760 '*****
*****
```

Continued On 46

"Downtime"

Rush Caley

(Editor's Note: For those of you suffering through the last dog days of summer or an overly warm Indian Summer please note that Rush wrote this article back when the snow was still falling in the great Northwest.)

MAPPING COCO'S TRUE VALUE

Cartographers take note! Port Orchard is finally deserving of a place on the real map. Finally after three years here in solitude, we actually have a CoCo Users Group. Right, an actual club that meets at the same place every third Tuesday of the month. I have been astounded at the variety of people and talents that make up the group. I can guarantee that in this neck of the woods the CoCo is very much alive. We have members who are totally new to the CoCo Community, and some old timers who have been around forever. Special thanks go to a gentleman named George from the Radio Shack Computer Center over in Bremerton. He's the one that got it started.

One thing I enjoy about a club is that the members have such a wide variety of interests. There's hardware hackers, programmers, graphics specialists, modem junkies, gamesters, and application users like myself. The meetings are informative and focus on the number of uses that people find for their computers. This really zeroes in on one of the topics I'd like to discuss this month. What do you REALLY DO with your computer? How is it put to use? What is the focus? Entertainment, relaxation, education, art, music, scientific endeavor? What do you REALLY DO with your CoCo? No... don't answer that fast. What do you REALLY DO with it?

So I decided I'd make a list. Now what goes on the list is solely determined by the primary role you have assigned to the computer. For me, the computer is a tool which provides assistance in the completion of everyday tasks. For my list, I chose only those uses in which:

1.) The task was one which I had always done prior to having the computer and accomplished by other means.

2.) The computer has either made the task easier, or enhanced and enlarged it so that it became more useful.

3.) The task is performed on a regular and continuing basis - not merely a one time application.

So following is my list and the corresponding CoCo programs I use to accomplish the application:

1.) Most of my personal and business accounting has been simplified and become extremely effective due to QUIKPRO+ II by ICR Futuresoft. It is a program generator that lets you design input screens for data files and then actually writes the code. With QUIKPRO, I wrote an Income / Expense program that simultaneously tracks my 3 checking accounts and provides all the necessary reports. I also wrote a Sales Order/Invoice program which stores sales information and prints invoices. Finally, a General Ledger program rounds out the accounting tasks.

2.) Because of its many features, versatility, and ease of use, I still use WORKBASE ACCOUNTS RECEIVABLE for my computer service business.

3.) For maintaining my client list, I use Randy Krippner's fabulous SALES CLIENT MANAGEMENT SYSTEM. This program maintains demographic data, sales data, and appointment schedules. There is no other program currently on the CoCo market for this purpose; and it is a must for anyone in the business of sales who calls on customers on a regular basis.

4.) For cataloging my video collection, I use Randy Krippner's PERSONAL VIDEO DATA LIBRARY.

5.) Bob van der Poel's ULTRA LABEL MAKER cannot be beat when it comes to customized labels. For often used mailing labels, disk labels, video tape labels, and much more, this program gets a real workout at our house.

6.) I read alot. And for cataloging magazine articles, Bob van der Poel once again has the utility that does it all. His MAGAZINE INDEX SYSTEM provides access to titles, sources, and topics at lightning speed.

Downtime continued on 46

7.) There's a plethora of Name and Address tracking programs for the CoCo. Many of them are truly elegant. But once again, I went to QUIKPRO+ II and designed my own personal address and phone list program.

8.) For maintaining a catalog of disks and all my programs, I use a program that came out many years ago. For some reason, I've always found it to be my favorite for this type of utility. It's called WHERE'S-IT written by Ed Laidlaw formerly of Jarb Software.

9.) I get ideas at the strangest times. While at work, in the shower, in the middle of the night, and so on. For years, I used to keep an idea box. Whenever I got an idea, I didn't want to forget it. So I'd write the idea on whatever was handy and stick it in the idea box. On Friday night, I'd and examine all the ideas. Some of them were impractical, and I'd throw them away. If the idea still sounded like it was worth pursuing, I'd make it a task or project. Today, a wonderful program called JULIE THE MOUSE replaces the box. It is a very tidy mouse-based freeform database. At the click of the mouse I can retrieve all related notes on a given topic and add to, revise, or delete them.

10.) Last, but certainly not the least, comes word processing. This is one of the busiest applications for most CoCo users. For me, it occupies many hours a week. The word processor I use is BUSINESS WRITER by TCE programs. You may remember my review in the last issue. Although I have used it almost exclusively since 1986, it would be unfair if I did not also mention TELEWRITER 64 with ULTRA-TELEPATCH. Howard Cohen's blockbuster word spinner, later enhanced by Bob van der Poel, served me faithfully for 5 years.

So there's my "top ten". Obviously, there are many many other things I do with the CoCo and I use a variety of programs. But those are more sporadic. Apply the ground rules and try making a list for yourself. You may find it very revealing. When you finish, send the list to me and I'll forward the most interesting ones to Ted for publishing in the magazine.

THAT OTHER PLANET

You know there are real mysteries in life. Where does the other sock go? The one that goes into the wash machine but never comes out? Also, where do architects live? I've never seen a house designed by an

```
770 FORY=0TO26:FORX=6TO24STEP2:H
SET(X+(Y AND CA),Y):NEXT X,Y:RET
URN
780 POKE&HFFD8,0:RGB:WIDTH80:CLS
5
790 '*****
*****
800 ' BREAK/ERROR EXIT
810 '*****
*****
820 A=ERNO:IFNOT(A)THENPRINT"ERR
OR #";A;" IN LINE ";ERLIN
```

CoCo Clipboard Magazine

Advertisers Index

After Five Software	Pg. 14
Bob van der Poel Software	Pg. 39
Burke & Burke	IBC
CCMDisk Service	Pg. 11
Cer-Comp Ltd.	Pg. 4
Clearbrook Software Group	Pg. 32
Clipboard Ad Information	Pg. 21
CoCo Clipboard Subscriptions .	Pg. 16
CRC Disto	Pg. 25
Freedom Village	Pg. 34
Game Point Software	Pg. 8
Gimmesoft	IFC
Ken-Ton Electronics	OBC
Kenneth-Leigh Enterprises	Pg. 43
Orion Technologies	Pg. 28
RGB Computer Systems	Pg. 36
Rulaford Research	Pg. 43
S.D. Enterprises	Pg. 36
Simply Better Software	Pg. 7
T & D Software	Pg. 19
T & D Software	Pg. 7
Terry Simons	Pg. 23
TOMELA*Co.	Pg. 34

Downtime continued from 46

architect that any real family could live in. I believe there is a special planet where all these people congregate. They all wear one sock-from you know where- and they are hoarding thousands of sets of keys and pairs of sunglasses. In their spare time they mostly write silly books. Anyway, I think the environmental scientists have moved there too. They certainly don't live here anymore.

I like to follow the rules so I avoid jail. I don't want to leave this world having a bunch of jackasses making money off me selling tee-shirts and funny tie-clips and chanting such phrases as "Let's fire up Ole Sparky". When they told us about ozone, I quit using deodorants and hairsprays with flouorocarbons. During the gas crunch of '73, I sold my Impala and bought a Pinto.

For the last few years I've heard nothing but all this chatter about the GREENHOUSE EFFECT. Now they're putting out "burning bans" saying we can't use our woodstove. They've even got people that go around and enforce it. I have nightmares of

being ripped out of my house by a State "Air Pig", driven to a local nursery, and forced to spend 3 days in a greenhouse to "get my mind right". As I write this, I have missed 2 days of work because I can't drive in all the snow and ice. It's 15 degrees outside and it'll be -5 degrees tonight. Hey, this is Washington State! So much for the global warming trend.

CoCo Clipboard Magazine



Burke & Burke

P.O. Box 58342
Renton, WA 98058



TOLL-FREE U.S. ORDER HOTLINE:
1-800-ADS-AHOY 1-800-237-2409

TECHNICAL SUPPORT &
INTERNATIONAL ORDERS:
206-235-0917

WASHINGTON RESIDENTS PLEASE ADD
8.1% SALES TAX. Minimum U.S. shipping
\$3.00; \$4.00 to Canada. \$2.75 U.S. COD
charge. Please allow 2 weeks for delivery.
U.S. overnight or 2-day delivery available
for in-stock items. Software upgrades \$5.00
each (free with orders over \$25).

QuarterMeg

256K memory upgrade
for CoCo 3: \$99.95!



Price includes 4 memory chips at our current reference
market price. Due to fluctuating market conditions, prices
are subject to change without notice.

A New Breed of CoCo 3 Memory Expansion
Uses existing CoCo 3 64K x 4 memory chips!

Our revolutionary circuit combines four 64K x 4 memory
chips on the QuarterMeg board with the four identical
memory chips in the 128K CoCo 3 to double your OS9 and
BASIC memory to 256K. Piggy-back upgrades to 512K!

Zero-K QuarterMeg (no chips) -- \$39.95



Also available: Standard QuarterMeg (4
chips), Full QuarterMeg (8 chips) & Fat
QuarterMeg (512K -- 16 chips)

>>> MARKET PRICE <<<



File System Repack



Your OS9 disks are suffering from a bad case of
fragmentation, and **\$29.95** we've got the cure.

Did you know that OS9 gets less efficient (and just a little slower) every time you use it?
It's true! As you modify or create files, OS9 breaks them up into smaller and smaller
pieces scattered randomly across your disks. Smaller pieces mean slower disk access.

Our new File System Repack program examines each file on your hard or floppy disk. It
reverses the effects of fragmentation by gathering up and combining pieces of files. In
addition to the immediate benefit of a faster system, our program also reduces disk
head movement -- in the long term, decreasing wear on your system's mechanical parts.

Real BASIC for OS9! **R.S.B. V1.3 \$39.95**

Burke & Burke's R.S.B. software gives you a complete, OS9-compatible
version of Disk Extended Color BASIC. We've added new software for
OS9-style graphics, sound, printer, and disk I/O. The BASIC you know
and love is now running under Level 2 OS9 windows!

R.S.B. loads and saves files using OS9's file format, so we've also included
utilities to transfer BASIC programs and data files between OS9 and BASIC
disks. Of course, you can't use R.S.B. to run machine language programs,
and some BASIC commands work slightly differently under R.S.B.

Requires CoCo 3, 256K RAM, floppy controller with either Tandy Disk
BASIC or DISTO CoCo 3 CDOS, and Level 2 OS9.

HYPER-I/O \$29.95

Modifies Disk BASIC to use hard disks (CoCo XT, DISTO,
LR), RAM disks, & any mix of 35-160 track floppy drives.
Fully reset protected, 16K EPROM-able.

HYPER-III \$12.95

RAM disk and printer spooler add-on for HYPER-I/O.
Requires 512K CoCo 3 and HYPER-I/O.

HYPER-I/O Utilities \$21.95

Kevin Berner's wildcard copy, delete,
and file search utilities for HYPER-I/O

HYPER-I/O Disk Doctor \$17.95

Kevin's second utility package. Find
bad disk sectors, edit GAT/FAT, etc.
Both utility packages for \$37.95

CoCo-XT Hard Disk Interfaces

NO HALT • 1 or 2 hard drives • 30% faster than SASI • Uses PC-type hard
disk drives & controllers • 5 Meg to 120 Meg per drive • Does not use
interrupts • Multi-PAK recommended • Includes EZGen boot file editor for
easy installation • CoCo XT-RTC includes real-time clock

CoCo XT \$69.95 CoCo XT-RTC \$99.95

XT-ROM AUTO-BOOT ROM . . . Automatically boots OS9 from your Burke
& Burke hard disk at power-up. Use XT-ROM as a convenience, or for
fail-safe CoCo operation in unattended BBS, home security systems, etc.

XT-ROM \$19.95

4' hard disk cable set \$17.50

EZGen Version 1.06 \$19.95

Powerful OS9 bootfile editor. Change module
names, add or delete modules, patch bytes, or
rearrange modules. Works on other files, too.

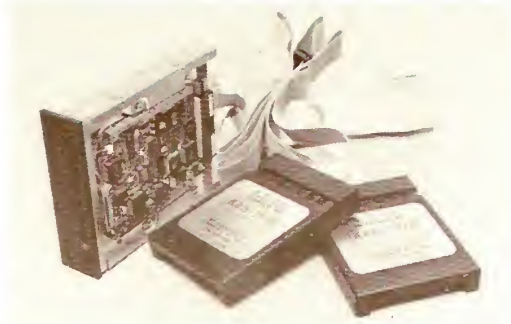
PERTASCII \$19.95

Level 2 OS9 scrambled-letter word game for
1-16 players. Play against the computer's
15,000 word dictionary or friends. 256K.

KEN-TON ELECTRONICS PRESENTS

SCSI HARD DRIVES

1990 TECHNOLOGY 50,000 MTBF



Shown w/optin for two CoCo hookup

20-30-42 Meg. Kits Available. Installs as easily as a floppy!

20 Meg only \$436*

30 Meg only \$476*

42 Meg only \$527*

*Call for you particular system requirements.

Our drives use the only true industry standard SCSI Interface!

Don't limit yourself to SCSI "Compatibles" that don't meet SCSI Specs!

Mil Spec Quality

DUAL COMM PACK

\$74 Single \$89 Dual



Shown with dual ports /T1 /T2 option

Exceeds Original Tandy Specs!

Onboard power up reset!

Onboard +/- RS-232 Voltages!

2 - 6551 ACIA's!

Ultra Low Power Draw!

Jumper selectable up to 4 channels!

2 Independent RS-232 channels!

OS-9 Compatible!

Y Cable Compatible

90 Day Warranty

SOFTWARE

RGB-DOS \$29.95 OS9 Utilities Ultra Basic \$19.95 Y-Cables CALL Real Time Clock \$29.95

Terms:

Check or M.O. accepted (US Funds only)

Please add \$4.00 for S&H

Phone Orders are welcomed!

CALL 1-716-837-9168 (24 hr. order line)



**KEN-TON
ELECTRONICS**

187 GREEN ACRES RD.
TONAWANDA, NY 14150

CoCo

Clipboard Magazine

3742 U.S. 20 Box 3, • Fredonia, N.Y. 14063

BULK MAIL
U.S. POSTAGE
PAID
PERMIT NO. 18
FREDONIA, N.Y.
14063